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TRANSACTIONS

OF THE

AMERICAN

PHILOLOGICAL ASSOCIATION.

1874.

PUBLISHED BY THE ASSOCIATION.
PRINTED BY THE CASE, LOCKWOOD & BRAINARD CO.,
HARTFORD.
1875.

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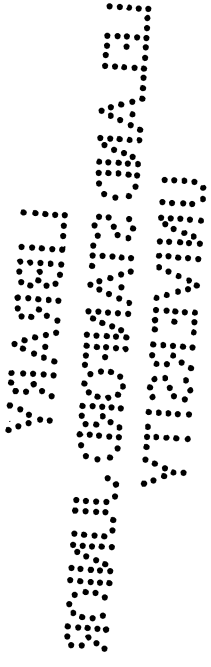

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PROCEEDINGS:—Sixth Annual Session, Hartford, 1874.

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TRANSACTIONS

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AMERICAN PHILOLOGICAL ASSOCIATION.

1874.

I. — *On the Prepositions in the Homeric Poems.*

BY WILLIAM S. TYLER,

WILLISTON PROFESSOR OF THE GREEK LANGUAGE AND LITERATURE IN AMHERST COLLEGE.

THE parts of speech, as they are called by grammarians, are a classification, founded in the nature of language, but at the same time inevitably more or less artificial and imperfect, of the different kinds of words in their relations to each other and to the sentence. No one has ever been able to give a perfect definition of any one of these parts such as would bear the questionings of a Socrates, or such as to include every thing that belongs to it and exclude every thing else. The *number* of classes or parts of speech which grammarians have made has varied widely at different times, and has not yet been settled beyond dispute. Two different classifications have come down to us bearing the name and clothed with the authority of the great Greek philosopher who was the founder of the science of classification — both marked by his fondness for simplicity and excessive generalization — one of which makes but three parts of speech (grammatically), viz.: verbs, nouns, and connectives, and the other makes four, viz.: verbs, nouns, articles, and connectives (*ῥήματα, ὀνόματα, ἄρθρα, σύνδεσμα*). Both these are natural classifications founded in the nature of the sentence, and answering to the logical

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distinctions of the subject, the predicate, and modifiers, of which distinctions there will, of course, be either three or four according as we include *all* modifiers in one class, or distinguish modifiers of the verb from modifiers of the noun.

But these classifications are too general to satisfy the demands of most grammarians; and they easily admit of further division and subdivision. Hence the number of parts of speech was gradually increased by the Greek philosophers, particularly the Stoics, who were especially given to grammatical studies, till nine became with them, as it has usually been with modern grammarians, the accepted number.

Some Roman grammarians in the time of Quintilian, as we learn from that judicious scholar, went on still further dividing and subdividing till they made ten, eleven, or twelve parts of speech in the Latin language, without the article which is wanting in that tongue. Quintilian himself disapproved of these later and subtle distinctions, leaving undecided however the question whether all *names* should be classed together, or whether they should be distinguished into substantive and adjective nouns.

Whatever may be the classification adopted, and however many or few the classes may be, there will always be words which cannot be referred absolutely or exclusively to any one class; either because they do not answer exactly to the definition of any one, or because they perform the office now of one part of speech, and now of another, and now they subserve the uses of more than one at one and the same time. Thus words which are usually parsed as adverbs, in all languages, often perform the office of conjunctions also, since they not only modify the verb of the clause in which they stand, but also connect the clause with some other part of the sentence.

The process by which the same words, or even whole classes of words, so change their use and office in course of time as to become different parts of speech from what they once were, is one of the familiar and one of the most interesting and instructive phenomena in the history of language. Thus substantives easily become adjectives and

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adverbs by a mere change of relation to the principal words of the sentence, while verbs, sometimes a source of supply for adverbs and prepositions, are recognized among the principal fountains from which conjunctions are derived. In other words, and as a matter of course, nouns become adjectives or adverbs whenever, ceasing to be themselves the principal subject or object of a proposition, they attach themselves as mere modifiers to other principal words; and verbs become adverbs, prepositions, or conjunctions, whenever, ceasing to be themselves the predicate of a proposition, they only modify or connect it. So that this process of transformation resolves itself into little more than a change of emphasis — at any rate it involves a change of emphasis, not less than a change of relation. Again, that is a most curious process, by which, simply by growing less and less emphatic, the demonstratives of so many languages have become first relatives and then articles or conjunctions; as, for instance, the English *that* (and so the Greek ὅτι and the Latin *quod*) was first a demonstrative, e. g.: "I knew THAT (*viz.* which) he said"; then, by a little falling off of the emphasis, a compound or simple relative: "I knew *that* he said"; and then, by losing all emphasis, a conjunction merely connecting the two clauses: "I *knew* that he said." By a similar process the definite article in English, as also in Greek, in German, in Italian, in French, and in the modern languages generally, was made from the demonstrative growing gradually less emphatic; and then, to supply its place in each of the languages, a lengthened and strengthened form was taken up for the demonstrative, in which the demonstrative element (*t* or *d*) was repeated at the end as well as the beginning of the root (compare the English *the* with *that*, the Greek ὁ, ὅς, or τός with οὗτος, the German *der* with *dieser*, etc.).

Of all the parts of speech, the preposition has been the most unfortunate in its nomenclature, being the only part of speech whose name expresses nothing of its nature or office, but merely its position with reference to the verb of which it is a prefix or the noun which it precedes; and that position, usual indeed, but by no means universal, still less essential

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or founded in the nature of things. If it must be named from an accidental circumstance instead of an essential characteristic, its position is indeed so generally a *pre*-position as perhaps to justify the name on the principle of logicians: *a potiori nomen fit.* And usage has so sanctioned the name that it cannot now be easily changed; for not only did the Greeks originate the name πρόθεσις, and the Romans translate it into *praepositio*, and the English into *preposition*, but even the Germans, whose grammatical nomenclature is usually so significant and so just, call this part of speech *die Präposition* and *das Vorwort*, although they sometimes also call it *das Verhältnisswort*, and thereby express its most essential characteristic.

The proper prepositions are not numerous in any language, scarcely a score in Greek, about the same in Sanskrit, and but little more than that number in Latin and the modern European languages. They are primitive words with monosyllabic roots, which reappear, with only accidental and euphonic variations, in all the branches of the Indo-European family. In Greek, however, the majority of them have been made dissyllabic by the addition of a vowel, which vowel receives the accent except when the preposition becomes a post-positive, in which case it suffers anastrophe. This annexation of a vowel illustrates the musical superiority of the Greek over other languages, as for instance the Latin, the vowels being the musical and the consonants the significant elements in language; and the fact that the accent regularly rests on this comparatively unsignificant syllable of the preposition, a syllable which disappears in the Latin and English equivalents, is itself sufficient to show that the Greek accent was not mere stress, but rather tone or inflection. For the most part the prepositions seem originally to have expressed such essential and fundamental relations of place and of motion as *up* and *down*, *over* and *under*, *to* and *from*, *in* and *out*, *on* and *off*, *before* and *after*, *at* or *near*, *through* or *amid*, *about* or *around*. From these space-relations they were easily transferred by analogy to express the relations of time, and then, by metaphor or other figure of

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speech founded on some nearer or more remote resemblance, they came gradually to denote all the varied relations of human action and thought. Of course no class of words can be more interesting, none more instructive to the philologist or the metaphysician, shedding so much light as they do and must, not only on the origin and progress of language, but on the fundamental laws of thought, and illustrating our intuitive conceptions even of the material universe.

It has been the almost unanimous opinion of philologists that the class of words which are commonly called prepositions were originally and properly adverbs. A class of words which originally signified *action* and *motion* would naturally be followed or accompanied by a class of words denoting the *direction* of motion and the *relations* of actions; in other words, verbs would not long exist without adverbs. But inasmuch as motion naturally ends in some place, and action terminates on some object, or tends to some result, when thought came to be more fully expressed, the same words which denoted the direction of motion and the tendency of action would naturally, not to say necessarily, denote also the *relations* between such motions or actions and the places, persons, or things affected by them — in other words, verbs and nouns could not be used to any great extent without adverbs being gradually converted more or less into prepositions to show the relations between them.

It becomes then an interesting question whether this theory of the normal rise and growth of prepositions is confirmed by facts. Are there traces of the process still remaining in the early literature of nations, or does it go back to a period antecedent to all extant literature — a period of which we have no other record but language itself? Do the earliest extant productions of Greek literature — for example, the Homeric Poems — exhibit to us the class of words of which we speak as fully adverbs, or fully prepositions, or in a transition state between adverbs and prepositions? All the authorities on Greek grammar, American, English, and German, agree in recognizing a marked peculiarity in Homer touching the use of this class of words, and differ only as to

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the extent in which they acknowledge it and the interpretation which they put upon it. Some regard them as already in reality and in the main prepositions, although used as adverbs more frequently by Homer than by later authors; and they treat what is called *thesis* as a real separation of the preposition from the verb. Such was the view generally taught in the grammars of the last generation and still accepted by some grammarians of the old schools. The more recent authors on Greek grammar, however, generally recognize this class of words in Homer as partly adverbs and partly prepositions, partaking more or less of the properties of both, and, as some distinctly affirm, in the stage of transition from the one to the other; and generally, although not unanimously, they explain what is called *thesis*, not as an actual separation of the preposition from the verb in a proper compound, but rather as an antecedent and more primitive stage of the language, in which the preposition was an adverb, although on its way towards composition with the verb.

In order to come at a more accurate knowledge of the facts in the *usus loquendi* of this class of words, I recently struck a trench through several successive strata of Greek literature somewhat as Dr. Schliemann has cut through the successive strata on the site of ancient Ilium, although my researches have not been as thorough as his, nor did I find or expect to find any such magnificent results. But I submit a brief report of my observations, or excavations if any choose to call them so. I went through first with the third book of the Iliad — a book which I am accustomed to read with almost every class, because it is a favorite book with me and generally proves equally interesting to my pupils — taking up each of the proper prepositions and noting its various uses, as a preposition preceding the substantive, as a prefix to the verb, as a post-position following the substantive, and as a separate word not connected with either the substantive or the verb. I noted also the comparative frequency of the occurrence of the simple verb and the verb compounded with a preposition. I then went through the seventh book of the Odyssey in the same way, examining and recording the same particulars. I

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then proceeded to examine in the same way a specimen portion successively of Sophocles, Herodotus, and Xenophon. I had thus gathered up statistics of the remains, so to speak, of successive strata of Greek literature, which I could compare numerically with each other. I shall not trouble the Society with all the details of these statistics. But I may say in brief, that they showed clearly enough a general and constant *diminution* of the separate and unprepositional use of this class of words from the earliest extant specimens of the language in the Homeric poems to the perfection of the Attic form and style in Xenophon's Anabasis, and a corresponding relative *increase* of their use both as prefixes to verbs and as prepositions governing substantives. Of the 251 instances in all in which words of the class called prepositions occur in the third book of the Iliad, 10 per cent. occur separate from either substantives or verbs, and 9 per cent. more come after their substantives, thus making 19 per cent. that are not strictly prepositions; while 81 per cent. occur in the normal state of prepositions, 47 per cent. before substantives and 34 per cent. in composition with verbs. In the seventh book of the Odyssey, there is the same percentage (10) of separate occurrence, and the only change (and that *perhaps* accidental) is that there are only 6 per cent. of post-positives, while there are 84 per cent. of normal prepositions, of which, however, a larger proportion, namely, 53 per cent., precede substantives and 31 per cent. are prefixed to verbs. In Sophocles, there are only 3 per cent. of separate words of this class (and these more manifestly cases of *tmesis*) and 3 per cent. also of post-positives, making only 6 per cent. in all of unprepositional use, while 94 per cent. are prepositionally used. A much larger proportion, however, 59 per cent., have now entered into composition with the verb, leaving 35 per cent. standing before substantives. In Herodotus, the unprepositional use has disappeared,* while 53 per cent. are in composition with the verb and 47 per cent. stand before substantives. In

* That is, in the passage of several pages which I used as a specimen. There are not wanting sporadic instances of *tmesis* and adverbial use, e. g.: ἀπὸ δ' ἔθανε, vi. 114; μετὰ δέ, vi. 120.

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Xenophon, the only change from the usage of Herodotus is that a still larger — a *considerably* larger — proportion of this class of words have entered into composition with the verb, namely, 59 per cent., while the remaining 41 per cent. stand before substantives.

A comparison of the compound with the simple verbs in this series of writers shows a corresponding change keeping regular pace with the progress of the language. In the Iliad and Odyssey only 14 per cent. of all the verbs are compounded with prepositions; in Sophocles, 26 per cent.; in Herodotus, 32 per cent.; and in Xenophon, 36 per cent. An examination of the first chapter of the Acts of the Apostles showed a still greater proportion of compound verbs, namely, 40 per cent.* Moreover, there is in Luke a marked increase of the disposition to *repeat* the *same* preposition, using it *both* before the substantive and also in composition with the verb, which usage is not unfrequent in Xenophon,† but is rare in Herodotus, while there is scarcely a trace of it in Homer or Sophocles.

It should also be observed that in Homer, where the preposition *does* enter into composition with the verb, it seems to retain more of its original adverbial force, whereas in the later Greek it perhaps gradually changes the meaning of the word, or perhaps loses its force so that the compound differs less and less from the simple verb; hence the naturalness, not to say the necessity, of sometimes reinforcing it by the *repetition* before the substantive of the same preposition which appears in composition with the verb. A good illustration of this peculiarity of Homeric usage in the verb compounded with a preposition may be seen in the 12th verse of the third book:

Τόσσον τίς τ' ἐπιλεύσσει ὅσον τ' ἐπὶ λᾶαν ἵησιν:

"And one sees on (sees over, sees ahead) only as far as on (over, ahead) he throws a stone;"

* A subsequent examination of specimen passages in Plutarch and in Tricoupes, the modern Greek historian, discovered a farther increase, namely, 41 per cent. of compound verbs in the former and 43 per cent. in the latter.

† In such constructions as εἰσ-(or ἐμ-)βάλλειν (or βαίνειν) εἰς, ἐκβάλλειν ἐκ, συστρατοπεδεύεσθαι σύν, etc., etc.

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where ἐπιλεύσσει does not mean "to oversee," "to overlook," or "to live to see," as such compounds do in later Greek, but "to see over," and the ἐπί in composition has just the same adverbial force which the same preposition has in the last clause of the verse, where it stands by itself, being separated, as some would say, from the verb ἴησιν by *tmesis*, but, to speak more properly, and as grammarians would now generally say, used as an adverb.

We have a similar use of the same preposition in the 277th verse of the same book:

Ἥλιος Ϝ', ὃς πάντ' ἐφορᾷς, καὶ πάντ' ἐπακούεις:
"And thou, O Sun, who seest over all and hearest over all;"

where the ἐπί has essentially or very nearly the force of an adverb of place, whereas in later Greek it gives to the same composite verbs the modified meaning "to oversee," and "to overhear" or "to listen to." The difference is analogous to that between *dúrchreisen* and *durchreísen* in German, of which the former means "to travel *through*" literally and emphatically, while the latter means only "to travel *over*" or "to traverse"; and in the former of which the preposition is separable from the verb, while in the latter it is inseparable. This is another illustration of the power of emphasis or accent to modify the meaning and use of words.

As a counterpart to the Homeric preference of the simple over the composite verb, Homer uses also the *noun* without a preposition — without any governing word — more frequently than it is used in later Greek, and that (as we might expect) the genitive or dative to denote primarily place, or secondarily some other relation which can easily be conceived as analogous to the space-relation. And in many instances where the preposition does precede the substantive or stands between it and the verb, it seems to hover between the office of a preposition and that of an adverb.

Facts then seem to justify the theory which is accepted by most modern writers on Greek Grammar, and to show not only that prepositions were originally adverbs, but that in the Homeric poems we see them in a transition state corresponding with the transition state of the pronouns and the generally

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flexible and formative condition which characterized the language at that early and formative period of Greek history. Homer is peculiarly worthy of the study of the philologist not less than the general scholar, as a faithful voucher and true witness, not merely of the state of society, government, morals, and manners of the heroic age (whence Frederic Schlegel fancies he received the name of Ὅμηρος, a pledge or voucher), but also for his unconscious testimony to, or representation of, the phenomena of language in that primitive period, when it was still flexible in its form and changeful in its features, but surpassingly rich in material and expression, and as far from being barbarous or savage, as were those elegant works of art which Dr. Schliemann found in the lowest strata of his excavations. The stone age in the language and literature, as in the art and civilization, of Greece was not before the golden age, but long after; it was not before, but long after, the poems of Homer.

II. — *On the Formation of the Tenses for Completed Action in the Latin Finite Verb.*

By ALBERT HARKNESS,
PROFESSOR OF GREEK IN BROWN UNIVERSITY.

In investigating the system of verbal inflections, as found in the Indo-European family of languages, the science of Comparative Philology has encountered few problems which have hitherto proved more difficult of solution than that presented in the origin and formation of the Latin perfect. Most of the prominent leaders in the new school of Philology — Bopp, Curtius, Schleicher, Corssen, and, more recently, Westphal and Mérguet — have given it careful thought, but the problem still remains unsolved. Many valuable facts have indeed been collected by these eminent scholars, and much light has been thrown upon many obscure points; but no explanation has yet been proposed which can be said to account fully for all the facts in the case; no theory devised which has met with general recognition among the scholars

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of the world. The question therefore of the origin and formation of the Latin perfect is unfortunately still an open one; and though its difficulty might well deter us from entering upon so unpromising a discussion, its great importance, from its vital connection with the whole subject of Comparative Philology, imperatively demands that we should still continue to investigate it. Each discussion may in its turn throw some new ray of light upon it, until at length its secret, we may hope, shall be exposed to the full light of day. If therefore this paper should succeed, even in the smallest measure, in preparing the way for the final solution of this difficult question, my attempt will not have been made in vain.

The Latin, Greek, and Sanskrit undoubtedly inherited from the mother tongue of the Indo-European family the power to express completed action by means of *reduplication*, and to create new tense-forms through the help of *auxiliary verbs*. The Latin, in its treatment of tenses for completed action, is distinguished from the Greek and the Sanskrit by a freer use of compound tense-forms to supply the place of the reduplication. While in the Greek λέλυκα, πέποιθα, and in the Sanskrit *babhúva*, *ćakára*, the reduplication is indispensable, in the Latin *amavi*, *audivi*, *monui*, *rexi*, no trace of it appears. The Latin has indeed retained a few reduplicated perfects, as *cecĭdi*, *cecĭni*, *pepĕri*, but in comparison with the vast number of compound forms, these appear but exceptions to the general rule.

But before we enter upon the discussion of the Latin perfect, it seems desirable to examine some of the compound forms in the other tenses for completed action, the pluperfect and future-perfect indicative and the perfect and pluperfect subjunctive. In these forms the auxiliary does not necessarily supply the place of the reduplication. In analyzing *cecineram*, as an illustration, we at once recognize the modified root *cin* with its reduplication *ce*, and the auxiliary verb *eram*. The root *cin* gives the general meaning of the verb, the reduplication *ce* denotes completed action, while *eram* adds the idea of past time. Hence we have an

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expression for completed action in past time. The Greek ἐπεποίθειν is a precisely analogous formation, consisting of the modified root ποιθ with its reduplication πε and the auxiliary ἦα, ἦαμ = ἦσαμ = *eram*. If now we compare the other tenses for completed action — *cecinero*, *cecinerim*, *cecinissem* — with *cecineram*, which we have just analyzed, we shall find that they differ from it only in the form of the auxiliary. Let us notice this point of difference more carefully.

Eram and *ero* in *cecineram* and *cecinero* appear to be the unchanged forms of the imperfect and future of the auxiliary *sum*, and indeed, if our analysis of *cecineram* is correct, they are such. It then seems to follow as a matter of course that in *cecinerim*, *erim* is the present subjunctive of the auxiliary *sum*, and that it is for *esim*, the full form for *sim*, which drops the initial vowel *e*, as it is also dropped in *sum* for *esum*, though retained in the Greek forms ἐστί, ἐσμέν, ἐστέ. The change of *s* in *esim* to *r* in *erim* is in accordance with a well-known law of the language which usually changes *s* to *r* between two vowels.

We have thus explained all the forms of the auxiliary in these compounds, except *issem* in *cecinissem*. That alone presents some difficulty. Whence comes the vowel *i*? What is the full form of each of the elements in *cecinissem* and how do they unite to form the compound? Are the elements *cecini-essem*, *cecini-ssem*, or *cecin-issem* with *issem* for *essem*? The second combination is the one generally adopted. Curtius says of the first (*cecini-essem*) that it would give *cecinessem* rather than *cecinissem*. This we freely admit. But what is the objection to the third (*cecin-issem*)? This alone would be in harmony with our explanation of the other compound tenses. The *i* in *issem* is undoubtedly of the same origin as the *e* in *eram*, *ero*, *erim*. May it not then come from *e* in *essem*? According to Corssen and others of undoubted authority, *essem* was originally *esem*, which would be the regular subjunctive — originally optative — formation from the indicative *eram* = *esam*. But *cecin-ĕsem* would become *cecin-ĭsem*, according to a well recognized principle that in reduplicated and compound verbal forms *a* and *e* are weakened:

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as *cado, cecidi; cano, cecini*, where *a* is weakened to *e* in the reduplication and to *i* in the stem-syllable; also *emo, adĭmo; lego, collĭgo*, where *e* is weakened to *i* in the compounds. Thus *esem* became *isem* in *cecin-ĭsem;* but when it became a recognized rule that *s* between two vowels should be changed to *r*, the alternative was presented by which *isem* would become *irem, erem*, as in the indicative *esam* became *eram*, or *s* would be doubled and thus protected against change. In the same manner the imperfect *esem* would become either *erem* or *essem*. The latter seems to have been the course actually pursued both in the simple *esem* and in its compounds; and hence we have *essem* and *cecinissem*. This is moreover confirmed by the fact that compound forms have been found with these different endings — *eset, esset*, and *isset;* as, *adi-ĕset, adi-esset*, and *adi-isset*.

But the explanation just given for the *i* in the ending *issem* is at variance with the generally received opinion upon the subject. Corssen, seeing that the *i* in *issem* is undoubtedly of the same origin as the *e* in *eram, ero, erim*, and the final *i* in *cecĭni*, identifies all these vowels with the long *i* in the perfect. In his view *cecin-eram* is a compound of *cecini* and *eram*. But, if that is the correct analysis of the form, how does the long *i* in *cecinī-ram* become short *e* in *cecin-ĕram?* Do we find any general analogy for this change? Indeed, would not such an analogy change the imperfect subjunctive, *audī-rem*, to *audĕrem?* The cases are entirely parallel.

But how shall we explain the endings of the perfect — *i, isti, it, imus, istis, erunt* or *ere?* This inquiry brings us to the vital point in our whole investigation — the formation of the Latin perfect.

The Latin perfects naturally divide themselves, in respect to formation, into three classes:

I. Perfects in *ui* and *vi: alo, alui; colo, colui; amo, amavi; audio, audivi.*

II. Perfects in *si: carpo, carpsi; dico, dixi; rego, rexi.*

III. Perfects in *i: cado, cecidi; tango, tetigi; capio, cepi; ico, ici.*

If now we inquire what is the tense-sign in each of these

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three classes, what characterizes these forms as perfect tenses, we shall find that perfects in *ui*, *vi*, and *si* are compounded with perfect tenses of auxiliary verbs. The tense-sign of the compound must therefore be sought in the auxiliary. All other perfects, i. e. simple perfects in *i*, according to Bopp, Curtius, Schleicher, Westphal, and others, were originally reduplicated and the reduplication constituted the tense-sign. As this conclusion, whose correctness I think there can be little reason to doubt, has been accepted with so little dissent, it will be sufficient simply to indicate in brief the general character of the argument by which it has been reached.

1. The simple perfects in the Greek and in the Sanskrit are reduplicated.

2. In Latin some of the perfects in *i* retain the reduplication in full, while most of the others lengthen the stem-vowel, thereby showing traces of a lost reduplication.

3. With four exceptions, the few perfects which retain the unchanged stem have the stem-vowel already long either by nature or by position. Moreover, of these four exceptions — *scidi*, *tuli*, *bibi*, and *fidi*—the first and second have archaic forms with reduplication, the third is in fact a reduplicated perfect, while all analogy shows that the fourth (*fidi*) must have been originally *fifidi*.

4. In some verbs there are found side by side reduplicated simple perfects and compound perfects without reduplication, showing that the tense-sign in the simple form resides in the reduplication and in the compound in the auxiliary, as *teneo*, *tetĭni*, *tenui*; *pango*, *pepĭgi*, *panxi*.

But we must hasten to consider the compound perfects. These end in *ui*, *vi*, and *si*. Those in *ui* and *vi* were explained by Bopp as compounds of *fui*, those in *si* as compounds of *esi*, a perfect formed from *es*, the root of *sum*, and corresponding to the Sanskrit *āsa* = *fui*. This explanation has been generally accepted by philologists, but has of late been called in question by Westphal and Merguet, the latter of whom denies its application even to *potui* for *pot-fui*, as the perfect of *possum*. He explains *potui* as formed from *potīvi* from *potio*, and thus, as he conceives, deprives Bopp's theory of its very strongest support.

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At first Westphal and Merguet both took the position that compound tenses may be produced by the union of inflected forms with each other, but not by the union of such forms with naked stems. They recognized such compounds as appear in the Sanskrit periphrastic perfect, *ćorayám-ása*, and in the French future, *j'aimer-ai*, but not such as Bopp found in the Sanskrit *á-dik-sham*, in the Greek ἔδειξα, and in the Latin *alui*. Such was Westphal's position when his Greek Grammar appeared; but in a special work on the Latin verbal inflections, published last year, he recedes from this position and expresses, in a most unqualified manner, the conviction that the Latin perfects in *ui* and *vi* are compounds of *fui*, and those in *si* compounds of *esi*.

But Merguet in his work entitled *Die Entwickelung der lateinischen Formenbildung*, published in 1870, claims that the union of inflected forms with naked stems is in itself a contradiction, inasmuch as, in his judgment, the two elements of the compound belong, as independent words, to different ages in the development of language.

To this sweeping criticism, Curtius in his recent work on the Greek verb replies:

1. That the assumption, that there could have been no transition period in which naked stems and inflected forms may have existed side by side as independent words, is utterly without foundation.

2. That compounds of inflected forms with naked stems do undoubtedly exist; that indeed no other reasonable explanation can be given of such forms as λογο-ποιός, πυρ-φόρος, and the like.

Thus the objection to Bopp's theory that the Latin perfects in *ui*, *vi*, and *si* are compound forms has, in my judgment, been fairly met. We proceed to examine the compounds themselves.

Alo, *al-fui*, *alui* (*f* dropped); *amo*, *ama-fui*, *ama-ui*, *amavi* (*f* dropped and *u* changed to its corresponding *v* between two vowels); *carpo*, *carp-ĭsi*, *carpsi* (*ĭ*, for *ĕ*, dropped); *dico*, *dic-ĭsi*, *dixi* (*ĭ* dropped and *c-s* united in *x*). Now all these perfects are such only by virtue of the auxiliary *fui* and *esi*

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contained in them. But what imparts to *fui* and *esi* their character as perfect tenses? That they are such, there can be no doubt, but what makes them so is not equally clear. Let us, however, compare these forms with the Sanskrit and Greek perfects from the same roots. The Latin *fui* and the corresponding Sanskrit *ba-bhúv-a* are inflected as follows:

fu-i,	ba-bhúv-a,
fu-isti,	ba-bhúv-itha,
fu-it,	ba-bhúv-a,
fu-imus,	ba-bhúv-ima,
fu-istis,	ba-bhúv-a,
fu-erunt *or* -ere.	ba-bhúv-us.

The contrast is scarcely less remarkable than the resemblance. They are undoubtedly corresponding forms, but they seem to have received very different treatment. The Sanskrit retains the reduplication; the Latin, apparently, no trace of it. The endings of *ba-bhúv-a* are not peculiar, those of *fui* are without a parallel, or even an analogy, in any other tense in the Latin verb. The Greek πέφυκα throws no light upon *fui;* we compare *esi* with the Sanskrit *ās-a*, and we encounter the same contrast as before; *ās-a* is inflected precisely like *ba-bhúv-a; esi*, precisely like *fui.*

Let us now note the points of difference and set distinctly before us the peculiarities of the Latin perfect, as seen in *fui*, *esi*, and their compounds.

1. The reduplication appears in full in the Sanskrit and in the Greek, but not in the Latin; though we should indeed have its equivalent in *esi*, if we could prove that the initial *e* is long, as is generally assumed without proof from its connection with the Sanskrit *ās-a;* but as this vowel uniformly disappears from the Latin paradigm without leaving any trace behind, there is, I think, good reason to question the assumption that it is long.

2. The *i* in *fui* is peculiar and requires explanation.

3. So also are the endings *isti*, *istis*, *erunt*, and *ere.*

In this list there are at least three or four points, which by general consent have never been satisfactorily explained. In regard to Bopp's labored effort to bring the Latin perfect into some sort of harmony with Sanskrit aorist forms, Corssen

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remarks that in the midst of all these varying and at times contradictory statements, he has endeavored in vain to find a consistent explanation of the Latin perfect in harmony with the facts in the case. His own words are: "Ich bin vergebens bemüht gewesen, in diesen und anderen schwankenden und sich zum Theil widersprechenden Angaben, eine feste und consequente mit den Thatsachen der lateinischen Sprache in Einklang stehende Erklärung des lateinischen Perfectum zu finden." With the same emphasis he also rejects the suggestion of Curtius, that the long *i* of the Latin perfect may be identical with the short *a* in the Sanskrit perfect. Schleicher recognizes in a verb like *facio* three distinct stems for the perfect: *fac* in *fac-sim*, *feci* in *fecit*, and *fecis* in *fecis-tis*. The first and third of these Corssen discards utterly; in regard to the second (*feci*), Schleicher himself admits that the *i* is added to the perfect stem, and is moreover of uncertain origin. His words are: "Ausserdem tritt ein in seinem Ursprunge dunkeles *i* an den Ausslaut des Perfect-stammes." No explanation is attempted of this troublesome *i*. Corssen calls it a vowel of formation (*Bildungsvocal*), and with Aufrecht identifies it with the *i* in the Sanskrit aorist in *isham*, as *ávēdisham*, but attempts no explanation. He derives *s* in the first syllable of *isti* and *istis* and *r* in *erunt* from the stem *es*, and in this view is supported by Curtius; though, so far as I see, neither of these eminent linguists makes any use of the fact.

Such, if I understand it aright, is the present state of the question involved in the formation of the Latin perfect. In view therefore of the great uncertainty which still hangs over several important points connected with it, I venture, with unfeigned diffidence, to submit to the thoughtful consideration of my fellow-laborers in this field a few suggestions, in the hope that they may at least aid us in our subsequent investigations.

A word upon the manner in which the Latin auxiliaries *fui* and *esi* are used in forming compound tenses, in distinction from the corresponding use of auxiliaries in the Greek and Sanskrit, may not be entirely useless at this point. We

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notice first that when the Sanskrit *āsa* and *ba-bhúv-a* are used in the formation of the periphrastic perfect, the auxiliary is retained in full with reduplication — *ćorayāmāsa;* and secondly, that in such compounds as the Sanskrit *á-dik-sham* (= *dik* and *āsam*) or the Greek ἔδειξα (= δεικ and ἔσα or ἧσα), the augment is uniformly retained. In Latin, on the contrary, though all the compounds of *fui* and *esi* uniformly retain *ui*, *vi*, and *si*, the *e* in *esi* entirely disappears in every instance, and with it all trace of that which makes it a perfect tense, if it is formed like the Sanskrit *āsa*. These facts suggest the inquiry whether *esi* may not be a slightly different formation from *āsa*, though an entirely analogous one; whether indeed we may not find here in the treatment of the auxiliary itself, the key to the explanation of some peculiarities of the Latin perfect.

The Sanskrit *āsa* is, I think, admitted to represent an earlier form *asasa* or *asasma*, with the root repeated in accordance with the original idea of the reduplication. Moreover, it will be observed that we have here only the repetition of a single syllable *as*, like that of οπ in ὄπωπα, οδ in ὄδωδα, ακ in ἀκήκοα, and like the corresponding reduplication in the Zend. After the analogy of *asasma*, the Latin *es* would give *esismi* inflected thus:

esismi	= esīmi	= esī,
esisti		esisti,
esisti	= esist	= esīt,
esismus		esimus,
esistis		esistis,
esĭsunt		esīsunt.

That *es* reduplicated produces *esis*, instead of *eses*, is in accordance with the well-known principle, already mentioned, by which *a* and *e* are often weakened in the reduplicated and compound forms: *cado*, *cecĭdi; emo*, *adĭmo; dedi*, *condidi*. Moreover, that the *i* before *t* in *dixit* may be identical with *e* seems to be supported by the fact that the form in *et* actually occurs in early inscriptions. Again, *i* is the favorite vowel before *s*, as is abundantly shown by Latin forms, such as *cinis*, *cineris; pulvis*, *pulveris;* so also before *st* in the middle of a word: as in *antisto*, *antistes*, etc.

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But let us now examine the changes which take place in our inflection of *esismi*. For the dropping of *s* before *m* in *mi* and *mus* in the first person singular and plural, we may adduce not only the corresponding treatment of the Greek *c* in εἰμί for ἐσμί and ἦμεν for ἦσμεν, but also the well-known usage of the Latin which often drops *s* before *m* in similar cases, as in *rēmus* for *resmus*, *ōmen* for *osmen; Cămēna* for *Casmēna*. If now we drop the personal ending *mi*, in accordance with the general usage in the first person singular of all leading tenses of the indicative, and then lengthen the preceding vowel in compensation, we shall have *esī* and *esīmus*. In the latter the *i* in the penult may be either long or short — short, if it follows the analogy of *Cămēna* for *Casmēna*, long, if it follows the more common analogy of *ōmen* and *rēmus*. Upon the latter supposition, it must have been subsequently shortened — a treatment by no means uncommon in vowels which have been lengthened by the principle of compensation, as in *pedēts*, *pedēs*, *pedĕs*.

The dropping of *i* final in the personal ending of *esisti* in the third personal singular requires no explanation, as it is in accordance with the general usage. In the same form the significance of the *s* before *t*, as a part of the stem, was in process of time practically lost, and finally the letter itself disappeared under the influence of the endings *at*, *et*, *it*, which regularly represent the third person singular in the Latin indicative and subjunctive. Thus *esist* became *esit* by a process which finds its complete analogy in the Greek ἦτον for ἦστον, and in the Sanskrit imperfect *a-śat* for *a-śast*, and in the aorist *á-bod-it* for *a-bod-ist*.

Tī in *esisti* of the second person singular is a recognized ending for that person and corresponds to the Sanskrit *tha*, the Greek θι in ἴσθι. It forms also the first element in *tis* of the second person plural. The quantity of the final *ī*, which Westphal pronounces a still greater problem than the preceding *st*, illustrates a treatment of this vowel by no means uncommon in the Latin. Short final *i*, it is well known, is generally lengthened, or changed to *e*. The Latin *istī*, as compared with the Greek ἴσθι, shows precisely the

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same change in quantity, as actually appears in the Latin *sināpī* as compared with the Greek σίναπι.

The *i* in the penult of *isti*, which is long by position, seems to have been at times treated as long by nature, perhaps after the analogy of long *i* in *esī* and *esīt*. The subsequent shortening of *ī* in this last form *esīt* before final *t*, requires no explanation, as it follows the general usage.

In the third person plural, *ĭsunt* became first *ĭrunt*, a form which actually occurs in inscriptions, and then *ĕrunt*. But in the classical period the penult of *erunt* was generally long, a fact which may be best explained in connection with the shorter ending *ēre*, as seen in *dixerunt* or *dixere*. This ending is generally explained as formed from *erunt* by dropping *nt* and weakening *u* to *e*. Westphal objects to this view, on the ground that the Latin nowhere else drops the plural ending *nt*, and that, if it did so here, we should probably have *ēro* and not *ēre*. He does not recognize the auxiliary *sunt* either in *erunt* or *ere*. I do not regard these objections as at all decisive against the common explanation, but I venture to suggest another, that in making our selection we may at least have a little wider choice. The Latin treatment of the root *es*, as seen in the verb itself, gives, in the third plural, *esunt*, which becomes *sunt* or *erunt;* but as *erunt* points back to *esunt*, so *ēre* seems to suggest an earlier form *ēsĕ* or *ēsĭ*, the latter of which finds an exact parallel in the Greek εἰσί from ἐσντί, and is formed in strict accordance with principles of general application, alike in Latin, Greek, and Sanskrit. In this form, *si* represents the personal ending *ti;* but *t* before *i* is often thus changed to *s*, as in *consensio*, *dissensio*, precisely as τ before ι is changed to σ in εἰσί. But in Latin *ēsĭ* becomes first *ērĭ* — a form actually found in inscriptions — and then *ērĕ* as in *carpsēre*, *dixēre*. Thus there may have existed, in the infancy of the language, two distinct forms side by side — a shorter form in *ēre*, with the penult uniformly and necessarily long, and a fuller form in *erunt*, with a short penult which may have become gradually lengthened by the analogy of its associate *ēre*. As a matter of fact, this penult was generally long, though by

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no means uniformly so; and if the more common derivation of *ēre* from *erunt* be preferred to the one here proposed, we may, I think, without impropriety assume that *e* in *erunt* was lengthened to bring it into harmony with the other long vowels in the endings of this tense.

If now we form perfects by appending the auxiliary *esi* to the roots *carp* and *dic*, we shall have *carp-ĭsi* and *dic-ĭsi* and, dropping *ĭ* (*ĕ*), *carpsi* and *dixi*, inflected thus:

carpsi,	dixi,
carpsisti,	dixisti,
carpsit,	dixit,
carpsimus,	diximus,
carpsistis,	dixistis,
carpsērunt (*or* -ēre).	dixērunt (*or* -ēre).

From *esi*, or its stem *esis*, may now be formed the other tenses for completed action, *esisam*, *esiso*, *esisim*, *esissem*, precisely as *esam* (= *eram*), *eso* (= *ero*), *esim* (= *sim*), and *essem* are formed from the root *es*. If now we append these tenses of the auxiliary to *carp* and *dic*, dropping the initial *e* and observing the ordinary euphonic changes, we obtain the regular classical forms.

carp-sisam = carpseram,	dic-sisam = dixeram,
carp-siso = carpsero,	dic-siso = dixero,
carp-sisim = carpserim,	dic-sisim = dixerim,
carp-sissem = carpsissem.	dic-sissem = dixissem.

Our discussion seems to warrant the conclusion that in the class of verbs which we have been examining, the peculiarities of the Latin perfect — the final *ī*, *s* in the first syllable of *isti* and *istis*, and the peculiar endings *erunt* and *ere* — may all be the direct result of the reduplication of the root *es* in the auxiliary. They are all readily explained in this manner without doing violence to any known law of the language, and without requiring the insertion of a single letter, even of a connecting vowel.

The examination of *fui* and of perfects in *ui*, *vi*, and *i* is reserved for a future paper.

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III. — *On an English Vowel-Mutation, present in CAG, KEG.*

By S. S. HALDEMAN,

PROFESSOR OF COMPARATIVE PHILOLOGY IN THE UNIVERSITY OF PENNSYLVANIA.

THE somewhat rare Celtic vowel of 'fat' occurs in Irish and Welsh,* and when present in European dialects, it is probably due to Celtic influence, as in Suabian, and in its French nasal form in 'vin.' It does not necessarily occur in the same word in languages where it is present, for the Irish word 'cat' (a *cat*) and 'capull' (Lat. 'caballus,' a *horse*) have the vowel of English *cot*. It is well established in English, where, from its affinity with *ĕ* of 'ebb,' the two present many interchanges, as in 'cag' and 'keg,' 'mash' and 'mesh' (of a net) where 'mash' is the vulgar and etymologic form, and Dr. Johnson says it is "better written, as it is commonly pronounced, *mash*." In certain localities we find forms like 'merry,' 'scelp,' and 'hev,' for 'marry,' 'scalp,' and 'have,' forms which are apt to disgust people who are not accustomed to hear them.

This mutation appears in English 'fat' as compared with German 'fett;' 'have,' old Saxon 'hebbjan,' low Saxon (or Plattdeutsch) 'hebben;' and as both vowels are present in low Saxon, this English interchange may be heard, as in the word for *six*, which, according to the locality, is 'sas'ə' (sɪs'ə, strictly with the vowel of 'fat') and 'sɛs'ə,' with the vowel of 'met.'

Mutations with the Latin or true *a* of 'arm' (as in 'barberry' and 'berberry,' Anglosaxon 'arc' and 'erc') and that of 'wash' and '+wesch,' are excluded from the following list, but as the vowel of 'fat' is often used in words with the allied â of 'âfter,' these pairs have been retained. Proper names, archaisms (marked with +), Scotch, and local English forms are included. The abbreviations

* As in Irish 'că'hăr,' *four;* Welsh 'băch,' *a hook*, the same vowel being lengthened in Welsh 'bāch,' *little*. Hald., Analytic Orthography, p. 85.

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used are: *Ch.*, Chaucer; *Hlw.*, Halliwell; *Str.*, Stratmann; *Sc.*, Scotch. Scotch examples must be cited with caution except by natives, as the spelling is deceptive. According to Mr. James A. H. Murray (Philol. Soc. London, 1873, pp. 109, 145), this dialect gives 'man' with the German and French *a*, and 'men,' 'pet,' 'led,' with the vowel of *add*.

The following lists contain about three hundred and twenty pairs of examples:

abbas *Hlw.*, abbess
abele, ebble *Hlw.*
ac *Sc.* (but, and), ec
ac-ute, edge
addabarân, aldebaran
adder, edder *Hlw.*
admiral, amrell *Hlw.*
after, efter *Hlw.*
agg* *Hlw.*, to egg *v.*
ak-yn *Sc.* (oaken), yek (oak) *Hlw.*
al-chemy, el-ixer
al-ligator, El-dorâdo
alf *Hlw.*, elf
+alfisch, elvish
ăl-ibi, ăl-ias, el-se
Alic, Elick
Alice, Elsie
alder, eller *Hlw.*
alum†, *for* elm
ambassador‡, embassy
amîr§, emîr
among, +emong
Amphipolis, Emboli
amty *Hlw.*, empty
+angel‖, +engel
annual, perennial
+anoug, enough
ant, emmet
antique, ancient(=en-)
+any, eny *Ch.*
appear-ance, appar-ent
apt, adapt, inept, adept
+arran (spider), nerane *Hlw.*
arrand, errand
arrant, errant
+asaumple *Str.*, example
+ascape, escape
ascry *Hlw.*, eskrie *Hlw.*
ash (ask) *Hlw.*, esh *Hlw.*
ash (stubble) *Hlw.*, esh *Hlw.*
ash (tree), esh *Hlw.*
ashes, ess *Hlw.*
ascend-ant *a.*, descend-ent *a.*
ascend-ancy, ascend-ency
ask, esse *Hlw.*
aspen, espin *Hlw.*
assay, essay
astonish, +estonen *Str.*
at, +et
attend-ance, tend-ency
attend-ant, intend-ent
+atter (poison), etter *Hlw.*
+attercop (spider), eddercop *Hlw.*
atwiten *Str.*, edwyte *Hlw.*

* Agg (to incite) — the popular and the preferable form. Pennsylvania.

† It is uncertain whether a western stream called Alum Creek took its name from the mineral or from the tree.

‡ The erroneous em- for am- in 'embassy' is due to Spanish, and is retained by the accent. See Hald., Eng. Affixes, p. 263, and compare 'empire' and 'imperial.'

§ This is the better form.

‖ Although Anglish 'eng-el' (not eng-gel) corresponds with German 'eng-el,' the dialectic form 'enc-gel' seems to indicate the *gay* in 'anger.' Similarly, Anglish 'angel' or 'angl' (a *hook*) is probably like German 'ang-el' rather than the English 'angle' = ang-gl.

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avery *Hlw.*, every
avoid, evitable
axe, exe *Hlw.*
axle, exle *Hlw.*
back, beck
baff *Sc.*, beff *Sc.*
bag, begg-ar
ballys *Hlw.*, bellows
band, bendy
bank, bench
Bâyou Tash, *for* — Tèche
+birafte, bereft
blacken, bleck *Sc.*
blanch, blench
bland *Sc.*, blend
bran, bren *Hlw.*
brand, brenne *v. Hlw.*
brant (goose), brent
+brant (steep), brent
cadlock, kedlock
cag, keg*
calash, caleche
calf, kelf (?) *Hlw.*
can *v.*, ken *n.*
canal, kennel
cand-ent, *etc.*, ac-cend, *etc.*
canine, kennel
cannel-coal, kennel-coal
canto, accent
canvas, hemp
capital, cephalic
capt-ure, inter-cept
carn-al, charn-el
cast, +cest†
castanet, chestnut
castrel, kestrel
catch, kecche‡
catsup, ketchup
chack *Sc.*, check *v.*
chack *Sc.* (a bird), check *Sc.*
chack *Sc.* (a meal), check
champion, kemp *Sc.*
channel, kennel
charity, cherish
chăstity, incest
claft *Sc.*, cleft
command, commend
cour-ant, curr-ent
crang, kreng
c-rank, wrench
daddy, deddy *Sc.*
Dak'han, Deccan
damn, condemn
dĭabolism §, devil
donat, donet
+drad, dread
drag, dredge
e-jac-ulate, e-jec-t
example, exemplary
+facche *Hlw.*, fetch
faction, defection
faloun *Hlw.*, felon
fan-cricket, fen-cricket
farrier, ferrier
farrow *a.*, ferow *Sc.*
fash *Sc.*, fesh *Sc.*
fasten, +festen
fatch *Hlw.*, vetches
fealty, fidelity
foc-al, fu-el
Frank, French
frantic, frenetic‖
Gallic, C^{k}eltic
gang *n.*, genge *Hlw.*

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* Compare the same sounds in Anglosaxon 'cæg,' 'ceg' (a *key*), etc.

† Pronounced *kest*, and used by Wyatt (1503–1542) as a rhyme to *best*.

‡ About 1275, according to Stratmann.

"To k e t c h him at a vauntage in his snares." *Spenser.*

"That, as pursued appearing at full stretch,
This, barking after, and at point to c a t c h." *Tate.*

§ The ĭ is marked as short, because English accent generally obscures the adjoining syllables.

‖ "An irous man is lik a frentik best."

Chaucer, l. 7631, where 'best' = 'baist,' a *beast*.

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+gather*, to-gether
ginsang †, ginseng
glabber *Sc.*, glebber *Sc.*
glance, glent *Sc.*
granadier, grenadier
granite, grenade
Guiana, Cayenne‡
hack *Hlw.*, hedge
hackle, heckle
hadder *Hlw.*, hĕather
hag, hegge *Hlw.*
han *Hlw.*, hence
hand, hend *Hlw.*
Handel, Hendel
hang, +heng *Ch.*
harry *v.*, herry *Hlw.*
Harry, Henry
has, hes *Hlw.*
hasp, hesp *Hlw.*
have, hebben *Hlw.*
hospit-al, hot-el
intend-ant, *etc.*, -ent, *etc.*
jasmin, jessamin
kavel *Sc.*, kevel *Sc.*
lactic, lettuce
+lad *Ch.* l. 7260, led.
+lasse *Ch.*, less
lat *Sc.* (to reckon), let *Sc.*
lather, lether *v.*
Maggy, Meg, Peg
malte *Hlw.*, melted
mameluke, memlook
man, men
+manace, menace
manage, menagerie
manifold (?), many§
maret *Hlw.*, merit
Mariatta, *for* Marietta
mash, mesh
maslin, meslin
mass, +messe
Massurâda, Mesurâdo
Matamoras, Metamoras
obeis-ance, obedi-ence
pall-mall, pell-mell
panel, penelle *Hlw.*
pansy, pensive, pensy *Hlw.*
pantile, pentile
pantograph, pentagraph
pector-al, poitr-el
pend-ant, pend-ent
penit-ence, pen-ance
pinchback, pinchbeck
placid, pleasant
radish, *as if* reddish
radly *Hlw.*, readily
rakene *Hlw*, reckon
ransom, redemption

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* Wiclif uses 'gethere' (Daniel iii. 2) as a transitive verb; 'geder-en' occurs about the year 1200 (Stratmann); 'gĕdher' is much used in speech, and Wordsworth rhymes it with 'hĕather':

"The wild-woods fruits to gather, . . .
A crest of blooming heather."

† Thus pronounced in the United States by those who know and collect the plant. When the root is forked it is likened to a man, and is probably named in Chinese from 'dzhin,' *man*, and 'seáng,' *form*, but in the literary language the second part is 'sēng,' and seems to be without a special meaning. Span. 'jinsing,' Port. 'ginsáō.' Webster (1828), quoting Grosier's China, gives the word as meaning "the resemblance of a man, or man's thigh." Worcester quotes Palmer for "*gen-seng*, first of plants," which is added as a second etymology in Mahn's Webster, and is an error due to a mixing of authorities. The Rev. Dr. S. F. Jarvis (Trans. Nat. Hist. Soc. of Hartford, 1836) quotes Jartoux for the proper meaning, "the representation of a man," for what reason he cannot tell. The Tartars call it *Orhota*, which means "the first of plants."

‡ Both of these appear in the name of the condiment 'ky-an'.' The 'cay' of 'Cayenne' and 'cayman' should be read *ki* (in *kind*) as intended by the writers.

§ 'Many,' a town in Texas, is called 'mann-y.'

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ranch, *for* wrench
rax, ratch *v. Hlw.*, stretch
redan, indent
raplock *Sc.*, reploch *Sc.*
lang-saddle *Sc.*, -settle *Sc.*
sack, seck *Hlw.*
sag *v.*, seg *Sc.*
salify, (salt)cell-ar
sally, salmon (summer)set
sampler, exemplar
satis-fy, as-sets
sattle *Hlw.*, settle *v.*
+sax *Str.*, +sex (an ax)
+Saxlond, +Sexlond
scad *Hlw.*, shed *v.*
scal-p, shell
scand-ent, ascend-ant
scarlat-inous, scarlet
serv-ant, subservi-ent
shadow, shed *n.*
slack, sleck *
slack, sleck †
slant, slent *Hlw.*
smack, smecen *Hlw.*
sparage, sperage
spat-ula, pĕt-al
stag *Hlw.*, steg (a gander)
strand, trend
+tache (a spot), tetch *Hlw.*
tamper, temper
Tamsford, Thames
tanrec, tenrec
tendrac, tenrec
tarantula, tarentula
tarrapin ‡, terrapin
tarras §, terrace
+tarre, +terry
tarrier, terrier
tassel (hawk), tercel
ten-ant, *for* ten-ent
+than ‖, then
thatch, deck
+thrad, thread
thrash ¶, thresh
track, treche *Hlw.*
track-pot *Sc.*, treck-pot *Sc.*
tractable, tretable *Hlw.*
trans(fer), tres(pass)
travesse *Sc.*, treviss *Sc.*
vacche *Hlw.*, fetch
Vandal, Wendish
vandue, *for* vendue
vanquished, venqueste *Hlw.*
vascul-ar, vessel
vi-and, viv-ency
wăme (venter), wem *Hlw.*
wax *v.*, wexe *Hlw.*
whammel, whemmel
+whan, when
wrack, wreck
wrastle **, wrestle
wratch *Sc.*, wretch *n.*
wrath *n.*, wreth *Sc.*
wrath, breth *Hlw.*
yalloch *Sc.*, yell *n.*
yaldran *Sc.*, yeldrin *Sc.*
yalowe *Hlw.*, yellow

Alsace, Elsess
affi-ance, diffid-ence
af-, de-fi-ant, diffid-ent
ambush, +embush
amend, emendation
+asoine, +essoin *Str.*
astray, estray
assist-ance, consist-ence

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* Small pit-coal. *Ray.* † To quench, as a fire; to thirst. *Ray.*

‡ This is the popular speech-form in the United States. Browne (Hist. of Jamaica, 1756, p. 465) and Schöpf (Hist. Testud., 1792, p. 64) call it 'terrapin,' and Lacepède (1788) calls it 'terrapène.' Compare Lenâpe 'tul-pe,' a *tortoise.*

§ "As in the Tarras heere this other day." *Drayton*, ed. 1613.

‖ "I heard a man, | That now and than." *Wyatt.*

¶ "Corn must be *thrash'd*, and ground for *food:*" *Pettus*, 1683.

** "VVhich wrastleth with the water," *Drayton*, ed. 1613.

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assist-ant, consist-ent
Aurangabad, Aurengabad
Aurangzib, Aurengzib
Balize, Belize
blab *Sc.*, bleb
bladoch *Sc.*, bledoch *Sc.*
blanch *Sc.* (a ray), blenk *Sc.*
blancher, blencher
blather, blether
Brackenridge, Breckenridge
Bustamante, -mente
chance, cadence
chavender, cheven
confid-ant, -ent, -ence
conniv-ance, -ent
counten-ance, contin-ence
crann-y, cren-ulate
cross-jack, crojeck
Damiata, Damietta
dan-delion, den-tal
dual, duel
eleg-ance, intellig-ence
eleg-ant, neglig-ent
en-amor, en-emy
fatten, fetten *Str.*
fasten, fest *Hlw.*
f-lag(stone), (crom)lech
flat *Sc.* (floor), flet *Sc.*
gag *Sc.*, geg
glanders, glen
gradual, ingress
Granada, Grenada
+jalous, jealous
labber *Sc.*, lebber *Sc.*
Lan-caster, Chester
+lassen, lessen
laverok *Sc.*, lerrik
manhaden, menhaden
miscre-ant, cred-ent, -ce
Navesink (N. Jersey), Nevnuis-ance, noc-ent
parrakeet, perroquet
persist-ance, -ent
+provand, provender
puiss-ant, pot-ent
rabbet, reb'ate
rab-id, rev-ery
remn-ant, reman-ent
resist-ance, exist-ence
resist-ant, exist-ent
snag (a cut), sneg *Sc.*
staddle, steddle
+stam, stem
that, +thet
thous-and, +thus-end
+thratte *Hlw.*, threaten
wax *n.*, +wex
Yeman, Yemen

IV. — *On a Passage in Homer's Odyssey* (x. 81–86).

By LEWIS R. PACKARD,

HILLHOUSE PROFESSOR OF THE GREEK LANGUAGE AND LITERATURE IN YALE COLLEGE.

ἑβδομάτῃ δ' ἱκόμεσθα Λάμου αἰπὺ πτολίεθρον,
τηλέπυλον Λαιστρυγονίην, ὅθι ποιμένα ποιμὴν
ἠπύει εἰσελάων, ὁ δέ τ' ἐξελάων ὑπακούει.
ἐνθα κ' ἀυπνος ἀνὴρ δοιοὺς ἐξήρατο μισθούς,
τὸν μὲν βουκολέων, τὸν δ' ἀργυφα μῆλα νομεύων·
ἐγγὺς γὰρ νυκτός τε καὶ ἤματός εἰσι κέλευθοι.

Od. x. 81–86.

THAT this passage was obscure and difficult to the early students of Homer appears from the number of conflicting explanations and conjectures suggested in the Scholia; and among modern commentators there is scarcely more agreement,

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though the conjectures are less wild. I propose to state the difficulties and briefly describe the different theories of explanation, and to indicate in what direction the true explanation of part of the passage appears to me to lie.

The first question arises as to Λάμου — is it the name of a city or of a person? It may very well be the name of a city; there is in Strabo (xiv. p. 671) mention of a river and a village, both bearing the name Lamos, in Kilikia, and the construction, a genitive of designation or apposition, occurs elsewhere in Homer as well as frequently in later Greek. An example is Il. ii. 538, Δίου τ' αἰπὺ πτολίεθρον. If we take it as the name of the city, the two words in the next line, τηλέπυλον Λαιστρυγονίην, may be regarded as adjectives agreeing with πόλιν, which is perhaps implied in πτολίεθρον. Others understand Λαιστρυγονίην as a substantive in apposition to πτολίεθρον, translating "to the city Lamus, to long-streeted Laestrygonia," in which phrase two names for the city are given. These are awkward, but perhaps not impossible constructions.

On the other hand, may not Λάμου be the name of a person, a former or the then reigning king of this land? This view likewise was taken in ancient times, and the Scholia even tell us that he was a son of Poseidon. It is difficult to find the origin of that statement, as this seems to be the only passage of Greek literature before the Christian era in which the name occurs. Probably the guess was suggested by the similarity in character of these Laestrygonians to the Kyklopes, who are some of them described in Homer as descendants of Poseidon. If Λάμου is the name of a person, it would apparently be some former king or eponymous hero of this tribe, as lines 106–111 below refer to one Antiphates as king at the time of this visit.

Then, if Λάμου is the name of a person, the next point of variation in the Scholia is as to τηλέπυλον — is it an adjective, or a substantive, the name of the city, and so to be printed, as Dindorf prints it, with a capital T? They differ also as to the meaning of the word as a compound (whether substantively or adjectively used in this place); is it "having

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gates far apart, distant from one another," or is it "having large gates, wide and high"? This latter view is taken by two modern editors, Ameis and Hayman, on the ground that such gates belong to a city of giants and where two flocks at once pass through the gates — an idea which is by no means clearly expressed in the passage. But they give no example to support this meaning, and I find no other compound of τῆλε having such a sense. It always has the meaning "distant, far" and never that of "large." For "wide-gated" we have εὐρυπυλής (Od. xi. 571); for "high-gated" the Scholia on this passage use μακρόπυλος. It seems then that τηλέπυλος should mean "having gates far apart," a description of a city either, as Nitzsch understands it, "with long streets" and gates at both ends, a length measured on a diameter, or, as perhaps is more natural, measuring the length on the circumference, with a long stretch of wall between its gates and so "large in circuit." The word occurs, I believe, nowhere except here and in Od. xxiii. 318, in a reference to this same city which occurs in a summary of the wanderings of Ulysses, but that summary, though a part of the poem in the time of Aristotle, for he (Rhet. iii. 16) refers to it as an example of successful condensation, is of doubtful genuineness in the view of modern critics. At any rate, it gives no real help to the understanding of this passage. On the whole, it seems that there are no sufficient data for a positive opinion on the questions raised in regard to this first line and a half.

We come now to the rest of the passage, which is evidently all one thought. The different items are parts of one fact in regard to this city, one distinguishing peculiarity, which the poet labors to make clear to us. The translation seems easy — somewhat as follows: "(a city) where one shepherd coming in hails another, and he going forth answers; there a man who needed not sleep could have earned double wages, one by herding cattle, another by tending sheep, for near are the paths of night and day."

The ancient comments upon these lines hardly deserve mention — certainly not the labor of refutation. One refers the description to the neighborhood of Leontini in Sicily,

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where, he says, the flies were so troublesome that the cattle could not be pastured in the daytime, whereas the sheep being defended by thick fleeces could be; and so the line referring to the different flocks is explained. Another supposes that the day and night pastures were different ones, but near to each other, so explaining the last line. Another, that the suburbs of the city were uncultivated, and so used for pasture land; and thus that a herdsman, not being obliged, as in other cities, to go to distant hills, might be able to go out twice a day with different flocks. It is plain that all these are mere conjectures, and some of them very unsuitable ones. There is a nearer approach to the probable truth in a suggestion attributed to Krates, the grammarian of Pergamos in the 2d century B. C., who thought that the whole account referred to some region of short nights. He is quoted as saying that they lived "about the head of the dragon," that is, in the region apparently under the constellation so named, "of which," Krates continues, "Aratus says 'that head will move there where risings and settings are closely joined together.'" It will be observed that this statement of Aratus has no reference to the passage in Homer. It is only the authority of Krates therefore, and not that of Aratus besides, that we have for this interpretation. He understood the phrase of Aratus as applying to the Laestrygonian country. Krates goes on to explain that since the outgoings of day and night were so near each other, the night must be very short and so a man who could dispense with sleep could earn double the pay of him who must spend a part of every day (of twenty-four hours) in sleeping.

We now turn to the opinions of modern commentators, for the fullest account of which I depend upon a young German scholar, now dead, J. F. Lauer, the first volume of whose literary remains (Berlin, 1851) is occupied with Homer. It is not however worth while to enter into all the conflicting and in many cases obsolete explanations which he discusses. I refer to his essay only as containing the best *resumé* that I have found of the various opinions; but I shall confine

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myself here to the views of recent scholars, mentioning enough to show the differences among men who all have the same general principles of criticism. Völcker (in his Homeric Geography. Hannover, 1830) perhaps hardly comes under this category, but his idea may begin the list. He supposes that the Laestrygonian city lay near sunset, or the entrance to Hades, and on a high mountain (*αἰπύ*); that the Greeks had noticed that sunrise came earlier and sunset later upon such mountain tops, as for instance upon Athos; and so that this city had a longer day than any other place and of course a shorter night. This idea that the city was on a high mountain is plainly inconsistent with the subsequent story in the Odyssey, and as to the rest of the theory the prolongation of day on a mountain top is hardly sufficient to suggest this exaggeration of it. Another idea is that of Klausen (die Abenteuer des Odysseus aus Hesiod erklärt. Bonn, 1834), that the day and night are spoken of as beings, not periods of time, that the western home of day was close by the Laestrygonian land, and that where the day was, it must be always light. This seems to be a step in the right direction, but does not cover the whole ground.

Nitzsch (Commentary on Odyssey i.–xii. Hannover, 1826–40) seems to have been the first to discuss the meaning of the passage in a simple and thorough way, introducing hardly any conjectures and explaining the whole as a whole. He assumes simply these two points, that the herds are driven forth in the morning and home at evening, and that the cattle are driven out earliest in the morning, the sheep come home latest at night. Where he gets this last idea I do not know; it may be so in fact in Germany or elsewhere, but I do not think there is any trace of it in Homer, nor does Nitzsch himself support it by any passage or speak of it as anything but an assumption. The passage then means in his view that the interval is so short as practically to disappear; the sheep-herd coming in at the end of his day meets and hails the cow-herd going out at the beginning of his, so near to one another are the goings forth of day and night. Thus a man who could dispense with sleep might go right out

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again with the other herd and so earn double pay. In support of this view he thinks it necessary to argue at some length that the word κέλευθος means in Homer not *way*, *road*, but the *act of going*, or, as he translates it, *Lauf*, *Fahrt*, *Fortgang*. His translation of the last line he defends by the authority of Eustathius (who however is not earlier than the twelfth century of our era), quoting from him as follows: ὡς ταχὺ μετὰ νύκτα τῆς ἡμέρας διαφαινούσης — ὃ παραφράζων Ἄρατος ἔφη τό· μίσγονται δύσιες καὶ ἀνατολαί. But, as we have already said, there is no indication in the poem of Aratus that this Homeric passage was in his mind. The connection is due to Krates only. The order of the words in the fifth line, Nitzsch adds, is to be explained by the fact that he would naturally mention first the herd that went out first in a given day.

With this explanation Faesi, the most judicious recent editor, in the main agrees, adding only the unimportant and apparently groundless conjecture, that the cow-herd would go out by the eastern gate, as the sheep-herd came in by the western.

The only other view that seems to deserve mention is that of Lauer in the book already referred to. He explains the third line as meaning that the sheep-herd coming in greets the cow-herd going out, and that this act of meeting occurs at evening. The reason for these opinions he finds in ἄυπνος ἀνήρ (for the time) and (for the order of meeting) the correlation of clauses in the third and fifth lines (a sort of *chiasmus*) — which are plainly inadequate proofs. The last line he translates as others have: "near to one another are the goings forth of day and night." Now he denies that the whole passage has any reference to the short nights of high latitudes; for his whole treatment of the subject is designed to combat the idea of any knowledge in the genuine Homer of the north of Europe. He supposes the poet to imagine this people as living very far from Greece, near the place to which the sun makes his daily journeys — so near that the day lasts much longer for them than for other people — but to imagine also, half unconsciously, that the sunrise occurs to them at the same time that it does to all the rest of the

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world, so that, the day being prolonged indefinitely towards its close, but not cut off equally at its opening, sunrise follows almost immediately upon sunset. They have indeed a night (νύξ, line 86), but the word means only the interval, however short it may be, between sunset and sunrise. As to the question how the sun gets back in time to rise in the east, Lauer says, as others have often said, that in such popular fictions we ought not to demand logical consistency or the carrying out of an idea through its results (weder Consequenz noch Durchführung). The imagination does not act logically; it views one thing at a time, and catches an idea without troubling itself as to contradictions between different partial representations. There is nothing in Homer as to the journey back of the sun from west to east; the myth of the voyage on the Ocean-stream in a golden boat is of later date.

Now I wish to present a view of the passage which differs in one or two points from any of these mentioned, and which seems to me to involve less of assumption and to agree better in one respect with the use of language elsewhere than any of them. I say nothing about the first line and a half, because, as already suggested, there seem to be no sufficient data for a positive opinion as to the precise meaning.

Let us assume, as naturally taken for granted in the mind of both poet and hearers, only this one thing — that herdsmen and flocks usually spend the night, that is, generally speaking, half of each twenty-four hours, in the fold, and the day only in the pasture. This is the representation in Homer in other cases. In that of the Cyclops for instance, in the ninth book, it appears as his habit to spend the night with his flocks about him in his cave, and to drive them out to pasture every morning (Od. ix. 216 f., 233 f., 307–15, 336–9, 405, 437 ff.). So too in that of Eumaeus, the swine-herd of Ulysses (Od. xiv. 13–22, xvi. 3). An apparent exception, in the famous simile at the end of Il. viii. (555–61), where the shepherd is spoken of as rejoicing in heart at the sight of the stars, ceases to be an exception when we remember that the shepherd's hut about which the flock would be folded might often be in the open country, perhaps on a hillside, where a wide view of the stars would be had in the evening.

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Now to apply the assumption based on these passages to the case in hand. Neither man nor animal spends all the time in the field, because of the need of sleep on the part of the man, and of protection from wild beasts or from wandering astray on the part of the animal. In a country not fully cleared of wild beasts nor fenced off into pasture fields, as Greece was not in the Homeric period, such is the necessary custom. So in the mind of the poet the idea of bringing in the flocks to the hut or to the town is naturally, we may say unconsciously, applied to Laestrygonia as it would be in any other case, from the usage with which he was familiar. Still if a man could dispense with all sleep he could there be out all the time, on account of the extreme shortness of the interval between sunset and sunrise. Yet it would not necessarily follow in the poet's mind, that a flock or herd could do the same thing, and so the double pay would have to be earned by bringing in, say the cattle for their milking and indoor time, and immediately taking out a flock of sheep for the rest of the long day. This explains the mention in the fifth line of the two kinds of animals to be tended by such a sleepless man. Thus too we understand the meeting at the gates mentioned in the second and third lines, of the outgoing and incoming droves. Nothing indicates whether cattle were going out and sheep coming in or *vice versa*, because each of these suppositions would be true at different times in the day and the description here takes the most general form. Nothing is said of its occurring at morning or at evening, for it might not be exactly at either. At certain intervals in the day of nearly twenty-four hours of light, without definite fixing of the intervals, without anything more scientific or positive than a play of the imagination, such a meeting, in whatever order, would happen.

The explanation of this strange phenomenon is in the last line, and the one point in it which gives room for uncertainty seems to be the first word, ἐγγύς. This word is generally understood, as we have seen, according to the idea of Krates (2d cent. B. C.) and Eustathius (12th cent. A. C.), as meaning "near to one another." Now ἐγγύς is used some forty-five

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times in the Iliad and Odyssey, and generally with reference to a subject in the singular (e. g. Il. iv. 496), often with also a dependent genitive expressing that to which the subject is near (e. g. Il. vii. 225, *στῆ ῥα μάλ' Ἕκτορος ἐγγύς*). In eleven cases of these forty-five (not counting the one under discussion) it refers to a dual or plural subject and has no dependent genitive (Il. iii. 344, x. 113 *τῶν γὰρ νῆες ἔασιν ἑκαστάτω, οὐδὲ μάλ' ἐγγύς*, 221, xi. 340, xviii. 586, xxi. 285, xxiii. 378, xxiv. 365, Od. ix. 166, x. 30, xxiv. 494); that is, it appears in the same situation as in x. 86. These cases then are the only ones which can illustrate the use of the word there, and in all of the eleven except one (Il. iii. 344 *καί ῥ' ἐγγὺς στήτην διαμερτηῷ ἐνὶ χώρῳ*) it must mean "near to something" mentioned in the context, not "near to one another." It thus appears that the usual sense of the word *ἐγγύς*, without *ἀλλήλων*, is that of simple, not reciprocal, nearness to something expressed in an adjoining clause and so easily supplied. So the less frequent collateral form *ἐγγύθι* is never used in Homer of a plural subject and without a dependent genitive, and never in a reciprocal sense. The true word for reciprocal nearness is *πλησίος* in the dual or plural, and sometimes in the singular as an adverb, with or without *ἀλλήλων*. It occurs some twenty-seven times, of which eight are in the plural or dual with the reciprocal and two with the single sense, four in the singular with reciprocal and thirteen with single sense; but of these thirteen, nine are repetitions of the line,

ὣδε δέ τις εἴπεσκεν ἰδὼν ἐς πλησίον ἄλλον,

so that throwing out this line, we have twelve cases in all numbers of the reciprocal and six of the single sense. Now with this preference of *πλησίος* in the sense of reciprocal nearness and *ἐγγύς* in the sense of simple or single nearness, it seems that we ought to prefer for *ἐγγύς* in this passage the usual sense, in which some of the Scholia take it; and then what is the implied object to which the subject is near? Plainly we should translate "near to the home of the Laestrygonians are the paths of day and of night." When we follow the narrative on, we find that this idea accords entirely with the subsequent representations. The next

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place to which they come, without any mention of time taken for the passage, is the Aeaean island, home of Kirke, a daughter of Helios. It appears that this island was not more than a day's sail from Laestrygonia in the poet's imagined geography, for in line 116 there is mention of a δεῖπνον, the morning meal, their flight is immediate, and no mark of time intervenes before their arrival at the island. Now at this island, as we learn from xii. 3 f., are "the home and dance rings of Eos, the dawn, and the risings of Helios." Less than a day's sail from there but on the farther side of Oceanos is the land of the Kimmerii (xi. 11–19) where perpetual night prevails, for the daily journeys of Helios are bounded by the Ocean stream. When the wanderers after returning from there leave Kirke's island they come speedily (xii. 166) to the island of the Seirens, and on the way the sun is so hot as to melt wax (xii. 175 f.), then immediately (xii. 201) to the abode of Skylla, then again immediately (xii. 261) to the island of Thrinakie, where are kept the cattle and sheep of Helios, guarded by his two daughters, Phaëthousa and Lampetie. All these wonders come in one day's voyage (xii. 284–93) from the island of Kirke. This whole account bears upon the line we are discussing. It represents this part of the journey, separated by six days' sail on the one side from the island of Aeolus and by nine days' sail on the other from the island of Kalypso, as spent in a region of marvels which is so because of its nearness to one of the abodes of Helios, or because, in other words, it is on the confines of the known world, at one end of the day. It is impossible to make out a consistent system from the fictions of the story-teller's imagination. He seems to have a dim idea that if one should travel west far enough he would come to a world of wonders, to the place of sunset itself, and that somehow he would find there sunset and sunrise not as far apart as they are in the ordinary experience of men. Certainly it would seem natural that to one travelling so far west the day would be indefinitely lengthened at the latter end, and the logical consequence, that it would be shortened at the beginning, might easily not have been thought of.

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Yet, in spite of Lauer's arguments, we can hardly think it impossible that the idea of such short nights was suggested by the stories of wandering Phenician or Greek navigators. Some may have gone far enough north in the Euxine or outside Gibraltar to have observed the shortening of the nights, and these stories may easily have been exaggerated by the popular imagination into such a form as this — just the form into which such exaggeration would naturally fall without knowledge of the facts which we know of the polar regions. They did not think of the night or day as lasting continuously for months, but only of the indefinite extension of what they had observed, the lengthening of the day to the extreme limit of the twenty-four hours.

The points in which this explanation differs from most other recent ones are two: 1st. The accounting for the mention of both sheep and cattle in the fifth line by the general habit of having each kind of animal at home half the time; 2d. The translation of ἐγγύς in the sixth line "near (to Laestrygonia)" instead of "near to one another."

V. — *On Numerals in American Indian Languages, and the Indian Mode of Counting.*

By J. HAMMOND TRUMBULL,
of Hartford, Conn.

That "all numerals are derived from the fingers"[1] is as generally true for languages of the new world as for those of the old. The North American Indians have, with comparatively few exceptions, adopted *decimal* systems, reckoning the fingers of *both* hands. Some South American tribes have not advanced beyond a *quinary;* and a few are said to be poorer even than this. The Brazilian Tupis had, at one time, no names for numbers higher than 3,[2] and the

[1] "Alle Zahlwörter gehn aus von den Fingern der Hände." — Grimm's Gesch. der deutschen Sprache, i. 167.

[2] The fact that the Tupis *lost* their names for 4 and 5, after the coming of Europeans, is worth noting. J. de Lery, who was in Brazil in 1557, writes that the "Tououpenambaults . . . . . usque ad numerum *quinque* verbis notare, hoc

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Abipones of Paraguay, as Dobrizhoffer states,[3] could not count beyond 4, giving to that number the name of 'the ostrich's toes,' *geyènknute*. Some nations, particularly those of Mexico and Central America, and the Eskimos, have reckoned by twenties instead of tens or fives, counting toes with fingers for the base of their numeral system. The Tule Indians of Darien reckon in this way: 20 is 'a man,' i. e. all his fingers and toes, 100 is '5 men,' and so on.[4] Gallatin has given a good account of these vigesimal systems in his "Notes on the semi-civilized Nations of Mexico," etc.,[5] the substance of which was incorporated by Pott in his *Zählmethode* (Halle, 1847). Mr. Gallatin had previously observed, in a note to his Comparative Vocabulary of fifty-three North American nations, "that all these had resorted to a decimal numeration." More recently, Buschmann has shown[6] that the system of the Athapascan family is clearly decimal, exhibiting traces of the vigesimal in two languages only — the Umpqua of Oregon and the Kinai; while of the languages of his Sonora group (including the Comanche, Paiute, Pima, and Shoshoni), seven have the decimal and five the vigesimal system, one (the Tarahumara) possessing both.[7] In some dialects, indications of a former vigesimal system, abandoned for or in progress of change to a decimal, may be observed.

The derivation of numerals from the fingers admitted, an answer to the question, *In what order* are the fingers counted? becomes a necessary preliminary to the investigation of any table of numerals. Which finger marks 'one'? Is it the

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modo: *augepé* 1, *mocouein* 2, *mossaput* 3, *oioicoudic* 4, *ecoinbo* 5."— Hist Navig. in Brasiliam, 1586, p. 272. (In the 5, we recognize *po* 'hand.') Jos. de Anchieta, in his Tupi Grammar, 1595, says: "Os numeraes não chegao mais que até numero de *quatro:* ut *oiepé* 1, *mocói*[n] 2, *moçapir* 3, *oyoirundic* 4." Eckart, a Jesuit missionary in Brazil, 1753–57, gives the same names for 1, 2, and 3, adding: "Non plus ultra Brasili *hodie* numerant," though he had seen names for 4 and 5 *(monkerondyc, ambó)* in 'an ancient grammar by Father Anchieta'; "sed uterque hic numerus modo jam exolevit."— Specimen Ling. Brasilicæ, 1778.

[3] Dobrizhoffer's account of the Abipones, ii. 168.

[4] See Lull's Darien Vocabulary, in the Am. Philol. Association's Transactions for 1873, p. 103.

[5] Transactions of the American Ethnological Society, vol. i. (1845).

[6] Worttafel des Athapask. Sprachstamms, §§ 114, 115, 157.

[7] Grammatik der Sonorischen Sprachen, Abth. 3, p. 141.

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little finger — or, as in the designation of numbers by educated deaf-mutes, the *thumb?* And, in passing from 5 to 6, i. e. from one hand to the other, is the sequence from finger to finger — thumb to thumb, like the Zulu[8] — or thumb to little finger, like the Veis?

Nearly all the information given by Gallatin and Pott on these points relates to the Eskimo numerals. In the language of "the Eskimos of Hudson's Bay, the names of the numerals 8, 9, 10, mean respectively, the middle, the fourth, and the little finger."[9] Pott, transferring this from Gallatin, infers (Zählmethode, 301) that the thumb of the second hand designates 6, i. e. 1+5 of the first hand. The account given by Cranz,[10] of the Eskimo mode of counting, is quoted by Pott as the starting point of his work: "Their numerals fall very short. However, they can with difficulty make a shift to mount as high as 20, by counting the fingers of both hands and the toes of both feet. But their proper numeration is five: *attausek*, 1 — *arlœk*, 2 — *pingajuak*, 3 — *sissamat*, 4 — *tellimat*, 5. If they must go further, they begin with the other hand, counting upon their fingers. The sixth [i. e. the thumb] they call *arbennek*, but the rest, till 10, have no other names but, again, 'two,' 'three,' 'four,' 'five.' They call 'eleven' *arkangat*, and 'sixteen' *arbarsanget*, and these *-teens* they count upon their toes. Thus they muster up 20. Sometimes they say instead of it, 'a man,' that is, as many fingers and toes as a man has;" etc.

That the fingers of the two hands were counted by other North American nations in the same order as by the Eskimos, several writers inform us:

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[8] "The Zulu, counting on his fingers, begins in general with the little finger of his left hand. When he comes to 5, this he may call *edesanta* 'finish hand'; then he goes on to the thumb of the right hand, and so the word *tatisitupa* 'taking the thumb' becomes a numeral for 6."—Tylor's *Primitive Culture*, i. 228. "The Vei people and many other African tribes first count the fingers of their left hand, beginning, be it remembered, from the little one, then in the same manner those of the right hand."—Id. 227.

[9] Gallatin's "Notes on the Semi-Civilized Nations of Mexico," etc. (*ut supra*), p. 49.

[10] History of Greenland (English translation, i. 225). The Greenland numeral system is more clearly and accurately exhibited by O. Fabricius, Grönlandsk Grammatik, 58–63.

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"The Dakotas, in counting, use their fingers, bending them down as they pass on, until they reach ten. Then they turn down a little finger, to remind them that one ten is laid away, and commence again. When the second ten is counted, another finger goes down, and so on."[1] "The Aubsároke or Crows [who are of the Dakota stock] like all the Indians with whom I am acquainted," says Dr. F. V. Hayden, "use their fingers in counting, bending them down temporarily against the inside of the hand as they proceed," etc.[2]

Mr. Say, describing the Indian sign-language, says: "To indicate the digits, they clench the hands and extend the *little finger of the left hand* for one, the ring finger for two," and so on to "the thumb for five, . . . the thumb of the right hand for six," etc. "When enumerating a small number, where a considerable exertion of the memory is requisite, the Indians extend the left hand with the palm upward, whilst, with the index of the right, the fingers are successively bent in to the palm, beginning as before with *the little finger*, and the greater difficulty in recalling to mind the numbers or events, the more apparent resistance is offered to the inflexion of the finger."[3] Prince Maximilian von Wied[4] gives a similar description, observing that "wenn man an den Fingern abzählt, so fängt man an der *linken Hand* an." Mr. Swan, in his account of the Makahs of Cape Flattery (Straits of Fuca), says of their mode of counting: "They commence with the little finger of the left hand, closing each finger as it is counted; then pass from the left thumb, which counts five, to the right thumb, which counts six, and so on to the little finger of the right hand, which counts ten."[5]

Whether an Indian marks 'one' by a thumb or a finger does not seem at first sight a question of much interest to students of language. It is, however, one of the thousand questions which every philologist must be prepared to answer

[1] Riggs, Dakota Grammar, p. 36.

[2] Contributions to the Ethnography and Philology of the Indian Tribes of the Missouri Valley, p. 396.

[3] Long's Expedition to the Rocky Mountains (Philadelphia, 1823), I. 388.

[4] Reise in das Innere von Nord-America, Bd. II. 650.

[5] Indians of Cape Flattery (Smithsonian Contributions, vol. xvi.), p. 100, note.

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before he is fully competent to discuss the subject of Mr. Robert Ellis's lately published volume "On Numerals as Signs of Primeval Unity among Mankind" (London, 1873). Mr. Ellis thinks that he has detected "a great number of coincidences, affecting not only numerals, but also the names of the members of the body from which those numerals are derived, in languages far removed from each other in position," and he presents these coincidences as "the result of primeval affinity — indications of unity of origin in human speech and, probably, in the human race" (p. 4). He assumes that "the names of numerals commonly carry in themselves the proofs of their own great antiquity" (p. 2). For the Indo-European and Semitic languages this assumption is perhaps well grounded; for the American, it is untrustworthy and unsustained by evidence, except — for reasons to be mentioned presently — as regards names for the first three numerals in languages of the same linguistic group. Admitting the original unity of American speech, it is yet certain that its division into widely separated families must have preceded the origin not of numerals only, but of the verbal or nominal roots from which names of numerals in the several families were derived. Even in the same linguistic group these names, as compared with other portions of the vocabulary, carry no indications of high antiquity, but rather the contrary; and in dialects of the same language names for the same number are often radically unlike. Compare, for example, the Algonkin 'fives': Massachusetts *napanna tahshe*, Micmac *nân*, Chippeway *nánan*, Abnaki *barenesku*, Delaware *palenach*, Illinois *miaranui*, Blackfoot *nísito*. Such dissimilarity is more apparent and more general in numerals above 'five,' which are with few exceptions composite. The Arikaras or 'Riccarees' of the upper Missouri speak nearly the same language as the Pawnees and, probably at no very remote period, belonged to the same nation. Their numerals correspond with the Pawnee numerals, to 'five,' inclusive; but here the likeness ends, not merely the *names* but the *primary conceptions* of the higher numbers differing in the two dialects. One Yuma dialect of the Colorado, the Mojave, repeats 1, 2, 3, in the

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names for 6, 7, and 8, and marks 9 as 'next to ten'; another, the Cuchan, near akin, regards 6 and 9, respectively, as a pair and a triplet of 'threes,' and 8 as a doubled 4. All these in some sense "gehn aus von den Fingern," but the same finger of the same hand or the hand itself may be — and in fact very often is — differently named, or the number it marks is differently expressed, by tribes speaking dialects of the same language; nor may we expect always to find *names* either of 'hand' or 'finger' in the numeral.

In the investigation of the origin of American numerals and in inferences as to their antiquity, two facts must be borne in mind:

1. The primitive mode of indicating numbers by the *fingers* is still in use. The *name* is not completely independent of the *sign*, and, consequently, the constancy of the name in passing from one dialect to another is less assured. When an Indian marks 'five' by showing or bending down all the fingers of his left hand, the vocal utterance — whether *nánan* or *barenesku* — is of secondary importance. In the Indo-European languages the *vocal* was long ago substituted for the *digital* expression. "It was no easy task for the linguistic faculty to arrive at a suitable sign," as the exclusive designation of a number, "and when the sign was once found, it maintained itself thenceforth in use every where, without danger of replacement by any other, of later coinage."[6] But this is necessarily true only of languages in which the earlier sign — by show of fingers — is obsolete.

2. The origin of names for 'one,' 'two,' and probably 'three,' in all languages, preceded formal numeration. Pairs, couples, doubles, were known before 'two' was counted on or marked by the fingers. The conception of *duality* dates from the first conscious separation of the 'not-I' from the 'I': and, with the first perception of differences in the 'not-I' — as 'this' and 'that,' 'here' and 'yonder,' 'thou' and 'he,' 'before' and 'after,' came the notion and name of 'three,' as something 'beyond,' 'besides,' or 'above'

[6] Whitney, Language and the Study of Language, 195.

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(tar, tri, trans, tres, très) the primary distinction; and thereupon, the exclusive and inclusive dual, 'thou-he' (and not 'I'), 'I-thou' (and not 'he'); after this, the conception of *plurality*, and *numeration*. Some nations, as we have seen, never advanced beyond the 'three.' Others (to be mentioned hereafter) only found their way to 'ten' by help of 'pairs' and 'triplets.' Hence, as Mr. Gallatin observed of American languages generally, "there is much confusion and but little regularity in the formation of the names expressing the higher numbers," even in nearly related dialects.

Mr. Ellis's first group of coincidences, and the one he regards as most important of all, includes North American words "of which different names for 'finger' supply the elements." These words, he thinks, "sufficiently illustrate the manner in which names for 'finger' and 'hand' are employed to form numerals; and by showing, moreover, that *hand* may = *fingers* = *finger-finger* (which last would be the rude plural of *finger*), they explain how 'hand' and 'two' may be the same word, as in the Omaha *nomba* which has both these meanings" (p. 6). He goes on to detect in the Basque language terms for 'finger,' 'one, i. e. finger,' and 'five = hand = fingers = finger-finger,' that correspond nearly with terms derived from North American languages, and finds coincidences with one or another of these in European and Asiatic names for 'thumb,' 'finger,' 'palm,' 'five,' 'six,' 'arm,' 'ten,' etc. (pp. 13, 14). He suggests the probability that "the Aryan languages virtually contain the forms *svas* and *saz* for 'five,' as the Basque contains *zaz* and as the North American languages contain forms like *azbaz*, such as Natchez *ispeshe* 'hand.'" And he argues (p. 18) that "if the resemblances between all these s *fives*, as they may be called by way of definition, were sufficient to imply affinity wherever they were detected, such affinity could be no other than a primeval one," — an inference the justice of which no one is likely to question. Even those much-vexed Etruscan dice of Toscanella are made to testify to primeval unity; for why may not *mach* [conjectured by Mr. Isaac Taylor to stand for] 'one,' be

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connected with "California (Sekumne) *ma* 'hand'" and "Comanche *mowa* 'hand,' 'arm,'" as well as with Siamese *mee* 'hand,' Armenian *mi* and Greek *μία* 'one,' and African (Melon) *moe* 'finger'?

Rigidly examined, these and a host of other coincidences which Mr. Ellis with much ingenuity presents, would prove to be less remarkable than they seem to him. It is not my purpose, however, to discuss them in detail, or to seek for them, collectively, any other explanation than the one which I am assured in advance "is not satisfactory" — namely, that so far as they are not imaginary, they "are merely accidental." I propose instead to make some observations on the composition and primary meaning of Indian names for numbers, and first, to point out such relation as I can find between some of these and names for the hand and the fingers. The examples will be taken chiefly — but not exclusively — from two great families of North American speech, the Algonkin and the Dakota, because, in these, published grammars and dictionaries facilitate etymological research and afford means of noting differences, phonetic and radical, between names in one and other dialects of the same stock.

I. In some languages we find only one name for 'hand' and 'fingers' collectively; and generally, for designating the fingers individually, names are formed from the word for 'hand,' with a descriptive prefix, e. g. the third finger is 'middle of the hand.'

Pott (Zählmethode, 234 ff.) has given illustrations from American languages of the recognition of a likeness between *men* and *trees*, and of figures of speech drawn from it. The arms are 'limbs' or 'branches' of the human 'trunk'; the hands and fingers are 'branches' of the arms; the fingers 'sprouts' or 'leaves'; the thumb a 'spur' or 'off-shoot.' Sometimes the fingers, collectively, are a 'row of branches,' or a 'fence.' Compare

Dakota	*nape* 'hand'; *napsukáza* ('small piece of hand') 'finger.'
Iowa	*náwe* 'hand'; *nawépa* ('hand point') 'finger.'
Chippeway	*-nindj* 'hand'; *biné* 'in a row'; *-ikwan* 'branch'; *binakwanindj* 'finger,' '(one of) a row of branches of the hand.'

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Massachusetts *-nutch* 'hand;' *pochi* 'divided'; *pochatuk* 'a branch, or division'; *pochanutch* 'a finger.'[7]

Cree (Western) *-tchitchïy* 'hand'; *yiyiki* 'forked,' 'branching'; *yiyikitchitchân* 'finger.'[8]

In some of the Algonkin languages, the name for 'hand' seems to be formed from a verbal root meaning 'to seize,' 'to lay hold of': ANŬN 'he lays hold of, catches,' *anutch* 'the layer hold of, the seizer'; *-nutch* (with pronominal prefix) 'hand.' In the western Cree, *-tchitchïy* (in composition, *otchi*) 'hand' is from the same root as the Mass. *-tchan* 'nose' (Chip. *odjanj*), which is found again in the final *tchân* of Cree 'finger,' meaning 'projecting,' 'point,' 'vertex.' The names for 'nose,' 'head,' 'fore-arm,' 'hand,' in the Dakota are apparently related one to another, their common root denoting 'pointed,' 'a projection, vertex, or extremity.' Compare with Dakota *pe* 'pointed, sharp,' *pe* 'top of the head,' *pa* 'head,' *paha* 'hill,' *pa-sú* 'beak or bill,' 'snout of an animal,' *apá* 'a part,' *apé* 'a leaf,' 'a fin,' *etápa* 'the right hand,' *ishpá* 'the fore-arm'; and Iowa *náwe* 'hand,' *náwe* 'leaf,' *nawépa* 'finger,' *pa* 'nose,' *pa-thūkh* 'beak.'

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[7] Compare Hawaiian *lima* 'arm' and 'hand'; *manamána* 'branching,' 'a branch' (redupl. of *mana* 'to be divided,' 'to branch'); *manamana lima* 'fingers.'

[8] My principal authorities for ALGONKIN languages are: *Massachusetts*, Eliot's Indian Grammar and version of the Bible; *Chippeway*, Baraga's Otchipwé Dictionary and Grammar; *Cree*, Lacombe's Grammaire et Dictionnaire de la Langue des Cris, and (Hudson's Bay dialect) Howse's Cree Grammar; *Delaware*, Zeisberger's Grammar, and Vocabulary; *Abnaki*, Rasles's Dictionary, by Pickering; *Micmac*, Maillard's Grammar; Dr. Hayden's Vocabularies of the *Blackfoot*, *Shyenne*, *Arapoho*, and *Atsina*. For the DAKOTA, my chief reliance is, necessarily, the invaluable Dictionary compiled by the Rev. S. R. Riggs and his associates in the Dakota mission of the American Board; and for other dialects, Dr. W. Matthews's *Hidatsa* (Minitari) Dictionary, Dr. Hayden's *Assiniboin*, *Aubsaroke* (Crow), *Mandan*, *Omaha*, *Iowa*, and *Winnebago* Vocabularies, the Rev. Wm. Hamilton's *Iowa* Grammar; for the *Ponka* numerals, a primer, "Ponka ABC Wa-bá-ru" (prepared by the Rev. J. Owen Dorsey, of the Episcopal mission); and for the *Osage*, Prince Maximilian von Wied-Neuwied's Vocabulary, compared with Gallatin's (in his Comparative Vocabulary).

The vowels are to be sounded as in German, except *ŭ* which is the short English *ŭ* in *but*, or the neutral vowel, variously represented in vocabularies as *ă*, *ŭ*, ʊ, and v. For the *n* which marks a nasalized vowel, I have substituted a 'superior' (ⁿ), and for the gutturals—variously represented by ch, ḥ, ḫ, χ, etc.—I have used CH or *kh*. The italic *ch* has the English sound (as in *church*), and *th*, *sh*, and *zh* (used interchangeably with *j*) are as in English.

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II. Counting the fingers from left to right, the numerals are distributed thus: Little finger, 1 and 10; Fourth finger, 2 and 9; Middle finger, 3, 8; Fore finger, 4, 7; Thumb, 5, 6.

1. 10. The fifth or little finger is variously designated in American languages, as 'the last of the hand,' 'the least,' 'the youngest son,' 'the little daughter of the hand,' etc. From one or another of these names, that of the numeral 'one' has, in many languages, been taken; but in others we find another expression for *unity*, 'one by itself,' which is probably of earlier origin than finger-counting. A distinction corresponding to that which is marked by the Indo-European cardinal and ordinal, between one *single* and one *coming before* others, 'fore-est,' first of a numeral series, seems to be universal in language.

In the Algonkin, these two names are represented by

Massachusetts	*pâsuk*	and	*n'qut, nequt.*
Chippeway	*payzhik* (*bèjig*)		*ningoto.*
Cree	*pêïak, païak,*		*nikut* 'some one,' *nikuton* 'formerly.'

A note in Cotton's vocabulary of the Massachusetts language distinguishes these names thus: "*Nequt*, a thing that is past. *Pasuk*, a thing in being." This note has puzzled more than one writer on the Algonkin languages.[9] Cotton himself had only half caught the true distinction between *pâsuk* 'one *only*,' literally, 'a small thing,' and *n'qut* 'first' or 'fore-est,' 'beginning.' The latter was used when speaking of a *one* which had been (or necessarily must be) followed by *another*, and in this way came its appropriation to "a thing that is past," i. e. a *former* thing. Hence, Mass. *nukkone* 'old,' i. e. passed by, and the ordinal *ne-gonne* 'first,' and *ne-kutche* 'the beginning,' 'it begins.' The prefixed *n'* in eastern Algonkin numerals is merely demonstrative.

Pâsuk is a contraction of *piasuk* (*peasik*, Eliot) 'very small,' the diminutive of *piak* 'small, little.'[10] Comp. Chip. *pangi* 'a little,' *pangishe* 'very little.' The root, *pi*, is seen

[9] See Mr. Pickering's note, in his re-print of Eliot's Indian Grammar (2 Mass. Hist. Soc. Coll., ix.) p. xlv.; Duponceau's *Mémoire*, 389, 390.

[10] Abn. *bi*, plu. *bi-ak*, Mass. *piak*, a 'grain,' 'bit,' or 'bead' of shell money; whence the name adopted by the English for unstrung 'peag' = Abn. *wa*^{n}*ban-biak* 'white beads,' Eng. 'wampompeag.'

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in Cree *peïak* 'one' and *api-s* 'small,' dimin. *apîsis* 'very small.' The little finger being counted as 'one,' *pâsuk*, *bèzhik*, 'the very small' has, as a result of association, been substituted in several dialects for *n'qut*, *nikoto*, as the name for 'one,' but the latter reappears in the composition of the higher numerals: e. g. Cree *peïak* 1, *nikot-wassik* 6, i. e. 'one over'; Abnaki *pezuku* 1, *nekud-a"s* 6, *nekuda"nkáo* 11.

The following are some of the names of the little finger, in North American languages:—

Alg. Cree	*iskwe tchitchanis* 'last little finger.'
Chippeway	*ishkwe' nindj* 'last of the hand.'
Abnaki	*askwanmi-retsí* 'youngest (last born) of the hand.'
Massachu.	*muttásonitch* 'youngest son (*muttásons*) of the hand.'
Dak. (Sioux)	*shashté* ? Comp. *chi' stin* 'little'; *chatan'* name of a fourth son.
Minnitari	(Hidatsa) *sháki-kazhi* diminutive of *sháki* 'hand.'
Mandan	*ungkní-ingka* 'little finger.' Comp. Iowa *î-yangke* 'one.'
Muskoki (Creek)	*enke-echkuswuche* 'hand's little daughter.'[1]
Choctaw	*ibbak-ūshi-ŭhli* 'hand's little son.'
Pawnee	*skēts-pit* 'finger little.'

Gallatin's vocabulary (from Parry) of the Hudson's Bay Eskimo gives *eerkitkoka* (Greenl. *ekékkok*) 'little finger' as the name for 'ten.' The Algonkin 'tens' are related to — but not derived from — names of this finger. These will be noticed hereafter.

2. 9. The Fourth finger — second by Indian reckoning — is in some American languages, as it has been in many languages of the eastern world, 'the nameless' (Sansk. *anâman*, *anâmikâ*; Lithuan. *bewardis*; Tibèt. *mingmed*). In others, it is designated only by its position 'next the little' or 'next the middle' finger. In mission-Indian it has received the name of 'ring finger.' Lacombe gives Western

[1] For translations of this and other Muskoki (or Creek) finger-names, I am indebted to Mrs. A. E. W. Robertson of the Tullahasse mission, and to Buckner and Herrod's Muskoki Grammar. For other languages of this group, I use the Rev. Cyrus Byington's "English and Choctaw Definer" (1852) and his Choctaw Grammar (posthumous) edited by Dr. D. G. Brinton (1870), and valuable vocabularies (MSS.) of the Muskoki, Hitchitee, Coassatti, and Alabama, collected by Gen. Albert Pike, in possession of the Smithsonian Institution, which I hope will soon be published, and with them, one of the Muskoki language, compiled by the Rev. W. S. Robertson and Mrs. Robertson. For the *Pawnee* and related *Arikara*, I rely on Dr. Hayden's vocabularies.

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Cree *atchani-tchitchân* (from *atchanis* 'a ring'), and so Von Tschudi in his Wörterbuch of the Kechua of Peru has *siui-rucanu* 'ring finger,' from *siui* 'ring.' In a few languages, its name denotes 'becoming smaller'—whether from its shape, more 'tapering' than other fingers, or from its size, as between the middle and little fingers, is not certain.

Dakota *shaste iyokihe* 'little-finger next-to.'
Minitari *shaki-kazi-utidu* 'that which the little finger joins,' or, as Dr. Matthews (Hidatsa Dictionary) translates, 'base of the little finger.'
Muskoki *enke-hochefkŭ sekŭ* 'hand's name-without,' 'the nameless.'

As a numeral I find the name of this finger only in the 'nines,' and here only in the

Eskimo, Hudson's Bay *mikkeelukkamoot* 'nine' = 'fourth finger' (Parry).
Greenland *mikkelerak*, 'fourth finger,' literally 'it becomes smaller.'
Algonkin, Shyenne *na-so'toyōs* 'my fourth finger'; *sohk'tu* 'nine.'

3. 8. The 'Middle' finger is so named in almost all languages, but it not unfrequently has the additional designation of 'the great' or 'chief.' It gives in many dialects a name—but not generally *its own* name—to the numerals 'three' and 'eight.' In the Algonkin languages, of two expressions for 'in the middle' or 'half-way between' (Mass. *noëu* and *nashaüe*, Chip. *nawaii* and *nassawaii*), one is given to the *finger*, the other to the *numeral*.

Abnaki	*na"wi-retsi* 'middle of hand';	*nass* 'three.'
Chippeway	*náwi-nindj* " "	*nisswi* 3; *ntjwassi* 8.
Cree	*táwi-tchitchân* 'middle finger;'	*nístoo.*
Mass.	(*nashaue, 'shawe* 'half-way');	*nish, nishwê, 'shwi-* 3; *shwosuk* 8.
Arapoho	(*naïthĭ* 'in the middle');	*nais* 3; *naisa-toh'* 8.
Sauki		*nissoa* 3; *shóashic* 8.
Shyenne	*no'toyōs* 'middle finger';	*nā'a* 3; *na-nōhk'tu* 8.
? Blackfoot	*nohkh, noho-ka* 'three.'	[Mass. *noeü* 'in the middle.']
Dakota	*napéochókaya* 'middle finger' (*ochókaya* 'in the middle').	
Minitari	*sháki-dumátadu* 'middle of the hand'; *dámi, náwi* 'three' (*dumáta* 'in the middle,' *nuwah'taru* 'between').	
Muskoki (Creek)	*enke nŭrkŭphuerŭ* 'hand's middle-stander.'	
Choctaw	*ibbak ūshi-iklŭnna* 'hand's middle son.'	
Pawnee	*skētsi-kadíka* 'half-way finger.'	
Navajo	*hullah náizi* " "	(*hulah', elá* 'hand').

In one dialect of the Eskimo (Hudson's Bay) the name, as in the Shyenne above-noted, appears only in 'eight:'

kittuklimūt 'the middle finger,' 'eight' (Parry).

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4. 7. The Fore finger has been, almost universally, the 'showing finger' or 'index.' Names for 4 and 7 are in Algonkin languages taken from it, or from the act of showing, or their connection with it is established through the demonstrative pronouns:

Eskimo (Greenl.)	*tikek* 'the pointer.'
ALGONKIN, Chip.	*ino'i-nindj* 'showing finger'; *niwin* (= *niouin*) 'four.'
Cree	*itwahigani-tchitchiy* 'pointer finger'; *néwu* 'four.' Comp. *naah* 'that yonder!,' *awâh* 'this one.' [As was before remarked, the *n'* prefixed to the Algonkin numerals is a demonstrative particle, and does not belong to the root.]
Massachusetts	*yau* (Eliot; = *iéu*) 'four'; *yeu* 'this,' 'there.'
Narragansett	*yòh* " *yò* 'there,' 'that way!'
Illinois	*niwi, niui* " *newa, newe* "voilà, regarde là," *iwa, iiwe* "le voilà."
Shyenne	*na-ni'sotoyōs* 'my fore finger'; *ni'soto* 'seven';[2] compare *nísiwo* 'that.' But Shyenne *nipa* 'four' has a different origin.
Arapoho	*yen* 'four'; *ti'ENA* 'to touch one *to call his attention* to anything' (Hayden).
Blackfoot	*ni-su'i* 'four'; *súmis* 'look!'
DAKOTA	*napé tokaheya* 'hand's first' (modern?).
	napé apazo 'hand's pointer' (*pázo, apázo* 'to point to, to show by pointing' — √*pa* denoting action of the *hand*).
MUSKOKI (Creek)	*enke-esmelkŭ* 'hand's pointer.'
Choctaw	*ibbak-ūshi-tikba* 'foremost (or eldest) son of the hand.'
	(The name for 4 is not, in any language of the Chahta-Muskoki group, taken from this finger.)
Navajo	*tîⁿ* 'four'; *tî* 'here,' 'this'; *n'la'-te* 'there' (*la* = hand).
Apache	*ti-i* " *ti* 'this,' 'who'; *ti-tchi* 'this day.'

5. 6. The Thumbs mark 'five' and 'six,' but rarely, if ever, give a name to either number, in American languages. In Algonkin, and in many other American languages, the thumb is the 'big,' 'thick,' or 'stout' finger; sometimes, 'the chief.'[3]

[2] The Zulu corresponds with the Shyenne in taking numeral names from the fingers of the *second* hand. "The Zulu verb *komba* 'to point,' indicating the fore finger or 'pointer,' makes the numeral 7. Thus, answering the question, 'How much did your master give you?' a Zulu would say, '*U kombile*' 'He pointed with his fore finger,' *i. e.* 'he gave me seven,' and this curious way of using the numeral verb is shown in such an example as 'amahasi *akombile*' 'the horses have pointed,' *i. e.* 'there were seven of them.'" — Tylor's Primitive Culture, i. 228.

[3] Compare Latin *pollex*, "vocatus quod inter cæteros *polleat* virtute et potestate." — Isidori *Origines*, quoted by Pott, 'Zählmethode,' 288.

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ALG. Chippeway	*mitchitchi-nindj* 'great finger.'
Cree (Western)	*misi-tchitchân* " "
Abnaki	*aghitkwe-retsi* 'chief (greatest) finger.'
Massachusetts	*kettiquanitch*, Blackfoot *omaki'chis* (*omukh-u* 'great'), and Shyenne *nama-a-im'oïk*, have the same meaning.
DAKOTA	*napa'hunka* 'the hand's elder' (*hunka* 'parent, ancestor, elder brother.' Riggs).
MUSKOKI	*enke ichhki*, and Choctaw *ibbak ishke*, 'the hand's mother.'[4]
PAWNEE	*skēts'-skūts* 'large finger.'
NAVAJO	*hullah tsó* 'thick' or 'big finger.'

III. Names of number that are not derived from the fingers individually. Names for 'one' and 'two,' as has been said (p. 46), must have preceded digital numeration.

1. There are, as we have seen, two expressions for the numeral 'one'; namely, '*only* one' and '*first* (fore-est) one.' In Algonkin languages these are represented in Mass. *pâsuk* and *n'qut*. The former expression is sometimes related to the pronoun of the first person singular and to the demonstrative 'this'; sometimes it has the meaning 'alone,' 'single,' or 'by itself.' Its root in Algonkin and Dakota languages denotes 'small.' The other expression for 'one' (=Mass. *n'qut*) is from a root denoting *priority* or *fore*-coming, in order or time, 'beginning;' and it has in many languages the secondary meanings, 'old,' 'aforetime,' etc.

In the Dakota family, one of these expressions is used for the cardinal, the other to form the ordinal: e. g. Dak. *wanzhi'*, *wa^{n}zhi'-da^{n}*,[5] *wa^{n}cha* 'one'; *toka'heya* 'first' (from *toka'* 'at the first'); Hidatsa (Minitari) *duétsa*, *luétsa* 'one,' *ítsika* 'first'; Iowa *'iya^{n}gke* 'one,' *pakranaha* 'first.' Between phonetic decay and dialectic growth,[6] the Dakota 'ones'

[4] So in Malayan (Pott, 'Zählmethode,' 299), and in American Maya, Huasteca, Tamanaca, etc.; and in Botocudo *nipo-diik* 'hand's mother.'

[5] Ihankton *wa^{n}zhi-na*. The suffix, *dan*, Ihank. *na*, is restrictive; 'one *only*.' "The form in counting is *wancha*" (A. L. Riggs) or, as Dr. Hayden writes it, *wunch*. This is further contracted in the Ponka to *win*, and in the Omaha to *wi*.

[6] Or rather, between "laziness and emphasis," as Mr. A. H. Sayce (Principles of Comparative Philology, 16) prefers to call the two great causes of phonetic change. Compare Whitney, Language and the Study of Language, 70, 95. In no American family of language is the operation of these principles more apparent and more troublesome than in the Dakota. Not merely that *wa^{n}zhi'dan* is shortened to Omaha *wi* or changed to Mandan *makh'ana* and Iowa *iyangke*, but in the same dialect, and from the lips of the same speaker, a name

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have become so widely variant that they cannot all be confidently referred to a common root. In several dialects, if not in all, the numeral has lost all *consciousness* of its roots, becoming a mere phonetic mark. Compare

Dakota	*waⁿzhi'daⁿ*	Ponka	*win*
Assiniboin	*washi'na*	Omaha	*wi* and *miaχtcheh*
Winnebago	*izhak'ida, hezunkera*	Mandan	*makh'ana*
Iowa	*ĭyaⁿgke*	Osage	*minche*
Hidatsa	*duetsa, luetsa*		

and — least conformable of all — Aubsaroke *hamat'*.

I was at first inclined to refer the Dakota *waⁿzhi* to the root *wiⁿzh* 'to bend,' from the *bending down* of the little finger in counting. Comparison of ten dialects of the same family makes it more probable, if not absolutely certain, that it is the equivalent of Algonkin *pâsuk* 'the least' or 'very small': compare with *waⁿzhi*, *wa'nikhadan* 'very little' and *waⁿĭcha-dan* 'very little, none'; *wáⁿske*, the name of the fourth child in a family, if a daughter (remembering that the *thumb* is 'parent' or 'elder' of the hand), and *wánka* 'soft, weak, tender.' With Iowa *ĭyaⁿgke*, comp. Mandan *ungkni-ingke* 'hand's little one'; and Winneb. *izháki-da*, with *wachek* 'young.'[7] In the Assiniboin, *nape* 'hand,' with

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may vary as *nowassa, duetsa, luetsa* (Minitari) 2; *pitika, pirika,* 10; *nahwi, dami,* 2; *bira, mida* 'a tree,' etc. In this last-mentioned Dakota dialect, the Hidatsa (called Minitari and Gros Ventres), Dakota *y* becomes *d* (*ya* 'thou' and *ya* 'to go' = *de*), *b* and *w* are interchangeable with *m*, and *l*, *n*, and *r*, with *d* (Matthew's Hidatsa Dictionary and Grammar, p. 28).

[7] Since this paper was written, I have been favored by the Rev. A. L. Riggs of the Dakota mission (Santee Agency, Nebr.), with some notes on the Dakota numerals, to which his father, the Rev. Stephen L. Riggs, contributed some suggestions. For the grammar and vocabulary of the language, I could have no higher authority; and when I have ventured to differ from Mr. Riggs's conjectures as to the origin of the numerals, it has been only after thorough comparison of the names in eleven languages of this family, with whatever light was to be had from published and manuscript vocabularies. Of the names for the lower numbers, Mr. Riggs writes: "I have thought that, as high as 'three,' the names of numbers arose from sight of outward objects, as 'one' evidently does." "*Wanji,* root *wan,* interjectional, 'see!'; *ji* [*zhi*] is not necessary, as the form in counting is *wancha* (for *wan-e-cha*). *Ji* means 'separately'; *dan* added has something the force of 'only.' *Nonpa,* 2. Root, *onpa* 'to lay on,' 'to add.' The origin of the *n* will be sought in different directions, according to the theory of the numeral. . . . . It may be that it comes from *nape.* While *nape* is the whole hand, in composition it may stand for a 'finger,' which is *nape-sukaza* = 'a single hand'" [or, 'a portion, *particle* of hand'?].

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nape-washi 'finger,' i. e. 'hand's little one,' and *washi-na* 'one'='a finger only.' The Dakota for 'fingers' is *nap-sukáza* 'hand's small portions,' from *su* 'seed, grain,' i. e. 'a particle,' which in Dakota more commonly becomes, in composition, *chi* or *cho*, as in Dak. *chika-da*ⁿ 'very small'= Assiniboin *chika-na*=Omaha *shinga* 'young,' Mandan *-sūk*, and diminutive *shūke*, as a suffix.[8]

In Hidatsa *duetsa* (otherwise *luetsa*, *nowassa*) there is wider divergence from the root; but we recover the meaning through *shaki-adutsa'mike* 'fingers' (*shaki*=hand), *adutsúa* 'a seed,' *adutsóhi* 'a point, a tapering end or part' (Matthews).

Aubsaroke (Crow) *hamat'* has the same meaning. Comp. Mandan *hámahe* 'small,' *sūk-hámahe* 'little child'; and Aubs. *amue* 'a grain, a kernel.' The suffix *-at*, *-ate*, is the common Aubs. diminutive. *Hamat'* 'one'='the least.'

In the CHAHTA-MUSKOKI family, we find the two forms — 'one only' and 'the first,' represented in

Choctaw *achŭfa* 1; 'sole, single, only one.'
tikba 'the first'; also, 'before,' 'ancient,' 'of time past.'
ŭmmona 'once.'
Muskoki *hŭm'kin* 'one.'
Coassatti *chafáka* and Alabama *chafahka-schie* 'one.'

Without attempting an exact analysis of these names, I remark (1) that Ch. *ŭmmona* 'first,' *hĭmona* 'once,' is merely a demonstrative: *himo*, *himak* 'now,' 'at this time,' 'to-day'; *himonasi* 'instantly,' &c.; obviously related to Muskoki *hŭm'kin* 1,[9] and *homa* 'before': (2) that Ch. *achŭfa*, and Coas. *chafáka*, seem, like the Algonkin and Dakota 'ones,' to be derived from a root meaning 'very small,' 'a grain, particle, or point'; comp. Ch. *chufak* 'an awl,' 'a nail,'

[8] Comp. also, Dk. *su*ⁿ*ka* 'a younger brother' (Omaha *sanga*), contracted to *su*ⁿ; *sha-ke'* 'a claw, a nail' (Om. *sha-ge*); *cho* and *su* 'a kernel,' 'grain,' 'seed.'

[9] Mrs. A. E. W. Robertson (wife of the Rev. W. S. Robertson, of Tullahassee, Ind. Territory), whose knowledge of the Creek language is as thorough as that of any one now living, writes (under date of Aug. 3d, 1874): "I see no connection between the [lower] Muskoki numerals and the names of *hand* or *fingers*, unless *hŭmke* 1, may be a contraction of *heyŭ enke* 'this hand.' In contraction, *m* and *n* seem to run into each other: e. g. *momet* becomes *mont*, *heyŭn* becomes *hŭm*, before words beginning with *m*; as *heyŭn mechetŭ* 'to do this' becomes *hŭmmechetŭ*, *heyŭn maketŭ* 'to say this' becomes *hŭmmaketŭ*. In a similar way, *heyŭn enke* ['this hand'] might become *hŭmke* 'one.'"

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chush 'tip,' 'point' (e. g. *ibbak-chush* 'finger nail' = 'hand's point'), *ibak-chufanli* 'tapering,' *chubi"hasi* 'little, not much.'

Pawnee *úska* 1, is evidently from a root found in *pid-úski* and *pir-ūski* 'young,' *kitalūs'ki* 'small,' and probably in *skēts* 'finger.'

2. Names for two seem to come from roots denoting (1) separation or distinction, as 'that,' 'the other,' (2) likeness, equality, or opposition, (3) addition, 'putting to' or 'putting with,' (4) coupling, pairing, or the like. These names, as has been said, must have preceded finger-counting or any formal numeration. They are often related to — possibly may have in some languages been derived from — names of natural pairs, as 'arms,' 'hands,' 'feet,' 'wings,' etc. From them or from the same roots come, by later derivation, names of *artificial* pairs, e. g. 'moccasins,' 'leggings,' etc., and of dual relation, as 'wife,' 'husband,' 'brother,' etc.[1] And here is the explanation of that connection between names of the 'hand' and 'two,' which Mr. R. Ellis regards as evidence "that *hand* may = *fingers* = *finger-finger*," and as "helping to exhibit the radical affinity which unites the North American languages" (p. 6).

Of natural 'pairs,' the *hands* have most often given a name to — or received it from — the numeral; because they *are* two, not because they "= finger-finger." Pott (Zählmethode, 29) notes Puris (Brazilian) *core* 'hand,' *curiri* 2; Hottentot *t'koam* 'hand' and 2; Sanskrit *kara* 'hand,'

[1] For example, Kioway *ki-iâ* 'husband,' *ki-u"* 'wife,' *gi-ă* 'two,' and *ki-atsi'* 'near,' i. e. 'next to'; of all which the common root is found in *ki-n* 'he,' i. e. 'another'; and Choctaw *tuk-lo* 'two,' *tek-chi* 'wife.' The connection of the grammatical dual with the idea of correlation, or of collocation merely, is illustrated by a peculiarity of Kechuan speech. The regular termination of the plural is *-cuna*, but there is a special plural in *-ntin*, for objects belonging to or associated with the noun in the singular: e. g. *hhuasí* 'house,' *hhuasiNTIN* 'all who belong to the house' or are 'of the household'; and with a noun denoting affinity or consanguinity this suffix *-ntin* forms a *dual*, including two individuals in correlation: e. g. *chosa* 'husband,' *chosantin* 'husband and wife'; *mama* 'mother,' *mamantin* 'mother and child'; *ususí* 'daughter,' *ususintin* 'daughter and mother'; *pana* 'sister,' *panantin* 'sister and brother'; with *masi* 'companion' and *yana* 'servant' it forms nouns meaning 'a pair,' *masintin* being more commonly used for persons and *yanantin* for inanimate objects. — Von Tschudi, die Kechua Sprache, pp. 95, 161.

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bâhu 'arm,' *paksha* 'wing,' and *nêtra* 'eye,' all used also for 'two.' The Samoyed Tawgi, also, expresses the number 2 and the substantive 'hand' by terms nearly identical.[2] In Labrador Eskimo, Richardson's vocabulary has *maggok* and *aggait* for 2, *agga* 'hand' and *aggait* 'the hands.' In the Algonkin and Dakota languages names for 2 and for 'hands' or 'arms' seem to be nearly related, either by derivation of one from the other or of both from a common root. In Algonkin dialects, compare —

Chip.	*-nindj* 'hand'	*nij*	'two.'	
Cree	*-nisk* "	*niso*	"	(*-nisk*, however, being used only in composition, as *kitchi-nisk* 'right hand').
Mass.	*-nutch, -nitch* 'hand'	*nîs*	"	cf. *nîsin* 'copulat,' *nichaïï* 'she gives birth to a child.'
Abnaki	*-retsi* "	*niss*	"	
Illinois		*ninch-ui*	"	
Miami		*nîchué*	"	
Arapoho	*-ichet* "	*nis*	"	cf. *inush* 'arm,' *inachása* 'the other side,' *neshíse* 'eyes.'
Shyenne	"	*nich*	"	

In one Algonkin language only, the Micmac (of Nova Scotia), we find another name for 2, *tabu*, i. e. 'equal' ('par,' 'pair'); but that it had once a wider range, we have proof in the Cree *tepa-kup*, Abnaki *ta"ba-wa"s*, Mohegan *tupou-wus*, and Montauk (L. I.) *tu"pa-wa* 7, i. e. 2+(or 2 of the second hand). The root, in the sense of 'equal,' and of 'enough,' 'sufficient,' is found in all Algonkin languages: e. g. Mass. (redupl.) *tatup*, *tatuppi*, Abn. *tetebi-wi* 'equally,' etc.; Cree *niya-tipiyaw* 'I my-*self*,' *tipiyaw* 'he him-self,' etc., *tipi-new* 'he measures it,' i. e. 'makes it equal to,' *tepi* 'enough,' etc. Mass. *tatup-pin* 'a string' or 'cord' is as near akin to Micmac *tabu* 2, as is Engl. 'twine' to 'twain.'

[The presence of this 2 in one Algonkin language, and evidence (in the 'sevens') of its former use in others, suggested a doubt as to the origin of the relation I had believed to exist between 'twos' and 'hands' in this family of speech. The authority of W. von Humboldt[3] and of Pott

[2] Benloew, Recherches sur l'Origine des Noms de Nombre, p. 50.

[3] Die Kawi-Sprache auf der Insel Java, Bd. 1. s. 20 ff.

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disposed me to recognize this relation. A comparison of the several Algonkin dialects and evidence supplied by other American languages led me to question it, and now I am nearly convinced that the connection of the numeral with natural duals, 'hands' or the like, is not by derivation of one name from the other; that the likeness, if not accidental, is a consequence of derivation from a common root; and that the primary conception of the Algonkin 'two,' whether expressed by Micmac *tabu* or Chip. *nij*, is that of 'sameness,' 'likeness,' or 'equality,' represented in the modern Chip. *iji*, Cree *isse* 'so,' 'such.'

The first three numerals are, in the Massachusetts dialect,

1. *ne qut*, 2. *n îs*, 2. *n ish;*

in the Chippeway,

1. *nin goto*, 3. *n ij*, 3. *n isswi.*

In these the prefix is, apparently, merely demonstrative (Mass. *ne* 'this,' 'that'), and does not belong to the root. In the 'two,' we have, I think, the Chip. *iji*, Cree *issi* and *iji*, 'so,' 'so as,' 'like' — which Baraga (Otchipwe Grammar, 493) classes as a conjunction, and Howse (Cree Grammar, 132, 142) as "the relative adverb of manner" and also "a generic noun." As a *verb*, it signifies, in the Chippeway, 'to be like' or 'the same as': e. g. *anishinabeg nind*-IJI 'I dress like (appear like) an Indian'; *iji-nagwad* 'it looks like' something, etc. *Niji*, contr. *nij*, 'two,' is 'this, such as' or 'like' the first — corresponding nearly to Micm. *tabu* 'par,' 'that which pairs.' The same root is in the Chip. *nidji*, or *nidj*' 'like myself,' 'my fellow,' 'alter ego,' which is only distinguished from the numeral by the change of pronoun in the second and third persons — *kidji*, *kidj*' 'thy fellow,' 'thy equal,' *widj*' 'his fellow, or equal' — used chiefly as adjectives, as *widj*'-*anishinaben* 'his fellow-man.' The dialectic variations of this particle correspond with those of the numeral 'two': Chip. *iji* and *n'ij*, Cree *isi* and *niso*, etc. In the Illinois dialect, *ninchui* is 2, *nichi* or *nigi* "comme cela" (Gravier).

If, then, Algonkin 'hands' and 'twos' are directly related, it is nearly certain that their relation is that of derivatives

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from a common root, or that the former receive their name from — instead of giving it to — the numeral. And this appears to be true of the relation of corresponding names in other American families of speech.]

The Dakota 'two' is the most constant of all the numerals, and dialectic variations nowhere disguise its relation to natural 'pairs.' The 'twos' are:

(Sioux) Dakota *no"pa*, *nōm*, Omaha *nombá*, *wamba*, Mandan *nūm'pa*, Osage *nombaugh*, Ponka *nánba*, Iowa *nówe*, Winnebago *nōmp*, Aubsaroke *nōmpe*, Hidatsa *nópa*, *dópa*.

With these compare: Dak. *nape* 'hands' and *napin* 'a pair, they two,' *ha"pa* (a pair of) 'moccasins,' etc., Om. *nomba* 'hands,' 'fingers,' Osage *nambe* 'hands,' Ponka *nanpé*, Iowa *nawé-pa* 'finger' = 'hand's head, or tip,' Winneb. *nábara* 'hands,' *namp-weisara* 'fingers,' Aubs. *núpere* 'both,' Hidatsa *huupa* 'moccasins.'

The primary meaning of the root, *o"pa*, seems to be 'to put to, with, on, or against,' 'ap-ponere' or 'op-ponere'; as a verb, *o"pa* is 'to place or lay any thing' on or with another: comp. *o'pa* 'to go with,' 'to be at' or 'on,' and (contr.) *om* 'with';[4] *ao"pa*, contr. *ao"*, 'to lay or place on' (as, wood on the fire); *sa"pa* 'over, beyond, more than,' used in forming the numerals 11 to 19 (e. g. *wikchemna sa"pa topa* 14 = 10 + 4); *ha"pa* 'moccasins,' *aka-sa"pa* 'opposite,' 'set over against,' etc. Perhaps, *a"pa* 'day' (*a"pa-o* 'dawn') is from the same root. We shall find it again in *topa* 4. The prefixed *n'* in *no"pa* — which in other dialects varies to *w* and *d* — seems to be merely a demonstrative or directive, as in the Algonkin numerals, and as in the Dakota verbal particle *na* 'take it' (imperative only), and in *no"* or *nu"* 'be it *so*.'

In the Chahta-Muskoki group, the 'twos' have a similar origin, in the notion of 'coupling,' 'mating,' or 'ad-joining':

Choctaw *tuklo*, Muskoki (Creek) *hokkólin*, Hitchiti *tōkh'lun*, Coassati *tókolōō*, Alab. *tókolō-chie*.

The root is represented in Choctaw *okla*, a collective

[4] "Koelle, Gram. of Vei Language, notices that *fĕra* means both 'with' and 2, and thinks the former meaning original (compare the Tahiti *piti* 'together,' thence 2)." Tylor's Primitive Culture, i. 235.

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pronoun used to form the plural of nouns and both the *dual* and plural (3d sing.) of verbs, with the meanings 'they two,' 'they,' 'people,' 'tribe,' etc., modified as *oklu^{n}ha* "all, the entire crowd, number, or quantity" (Byington, Choctaw Gram., 32, 41). The Choctaw *t'*, prefixed, probably represents the "distinctive preposition" *et* 'here, this way,' etc. (id. 42), a demonstrative. From the same root, apparently, are Ch. *hokohla*, conjunction copulative, 'also,' 'of the same class,' *hitukla* (=*et-okla*) 'twice,' and the verbs *tok-chi* 'to tie,' and *iba-ta^{n}kla* 'to go with,' 'to accompany.' Comp. Musk. *sahokolŭ* 'twice,' *hlisa-hokolat* 'secondly,' etc.

Athapascan 'twos' are, more commonly, related to names for 'feet' than to 'hands.' Chepewyan "*keh* 'foot,' 'shoe,' 'track'" (or their plurals), is often used as a numeral for 2 or 'a pair.' In the Apache, 2 is *na-ki;* 'foot' or 'feet,' *ki-e;* 'moccasins,' *si-ke;* Navajo *na-ki* 2; *iké* 'foot'; *kikh* 'moccasins.'[5]

3. Names for 'three' when not taken directly from the middle finger or 'half-way' of the hand, sometimes have the meaning, 'beyond,' 'further' ('trans'), or 'greater'; sometimes 'much,' 'the many'—a *plural* as distinguished from a *dual.*

All the Algonkin 'threes' are of the 'middle' (see p. 52, ante), except the Micmac *tchicht*, which seems to have had the meaning of 'more' or 'again' (= Delaware *tchitch* 'still more').

In the Dakota family, the 'threes' exhibit wider variance than the 'twos' from the original stock:

Dak.	*yámni, yámini*	Winneb.	*tâ^{n}, tau^{n}*
Assinib.	*yámini*	Iowa	*tányi*
Mandan	*námeni*	Omaha	*thábathi*
Hidatsa	*dámi, náwi*	Ponka	*tha'bthin*
Aubsar.	*nam*	Osage	*laubena*

The etymology is obscure. Comparing the Dakota and Aubsaroke forms with the Omaha, Ponka, and Osage, it seems probable that *-am* is a contraction of *a^{n}pa*—as *nom* is the contraction of *no^{n}pa* 2, and *tom* of *topa* 4. This would

[5] Gallatin, Synopsis of the Indian Tribes, p. 215.

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refer the numeral to the same root with the 'two.' The prefix may be the simple verbal *ya* (Hidatsa *de*) 'going,' as in *dya* 'they go together' and 'it becomes,' or more probably the inseparable preposition *i* (combining with the following *a*, as *ya*) meaning 'next in order,' 'again.' This would make *yam* = *i-ao"pa* or *ya-o"pa* — agreeing nearly with the verb *iyáo"pa* 'to lay on, to place on,' of Riggs's Dictionary. The pronunciation of the numeral is marked *ya'mni*, which suggests a reference to the verbal root *mni* 'spread out' or *mna* 'gathered, collected'; but the other dialects show that this root is not essential to the name, and if it enters into the composition of the Dakota name, it is probably supplementary to the principal root, so that *ya'mni* = *yam-mni*.[6]

The Winnebago and Iowa names have, apparently, a different origin, and Winneb. *ta"* may be the (regular) contraction of *ta"ka* 'great.'

In many dialects of the west and southwest, the name of the numeral has this meaning of 'great,' 'much,' 'many,' or the like: e. g.

YUMA (Mojave)	*hamóco* 3,	*húmik* 'great.'
(Cuchan)	*hamúk*,	*n'yamúk* "
PAWNEE	*tawit*,	*-tawio* (suffix) 'over, above,' *hawa* 'more.'
Arikara	*tawhít* (*wh* English),	*terhue* 'many,' *tiërwheu* 'great.'
NAVAJO	*tahh*,	*thla* 'much,' *na-tá-ni* 'a chief.'

4. Above 3, traces of digital numeration become more common, but the fact that in many languages 4 is a 'doubled 2,' or pair of pairs, seems to indicate that in these its conception and name were earlier than finger-counting. All

[6] The Rev. A. L. Riggs, in his letter of July 27th, before mentioned, regards *mni* as the root. He writes as follows:

"*Yamni;* root MNI or MNA. *Mni* is 'to gather in a circle or *group*'; as *yu*MNI *wachipi* 'the circle dance,' MNI*chiyapi* 'assembly.' Three is the smallest number, of course, that can make a group or circle. The correlate root MNA is more widely in use, and the meaning clearer: *ka*MNA 'to acquire or gather for one's self,' MNA*yan* 'to gather,' *opa-mna* 'a cluster,' as of young trees growing up out of the root or stump of an old one. If *yamni* comes from *mna*, the change of *a* to *i* would be for euphony. If *yamni* comes from the sight of outward objects [preceding formal enumeration], then we may find the *ya* to signify grouping by *calling* — 'calling' another to the two. If it springs from the finger count, the origin of *ya* is not clear. As *causative* affix, it should come after."

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Algonkin 'fours,' as was seen, are *demonstrative*, derived from the index-finger; but in two or three dialects the 'eights' suggest a primitive numeration by *pairs*. Of this mode I will speak more particularly hereafter, and here mention only the Dakota 4, formed apparently as a 'pair of pairs':

Dak. *tópa*, contr. *tom*, Hidatsa *tópa*, Mandan *tópe*, Ponka and Omaha *dúba*, Iowa *tówe*, Winneb. *chōp*, Aubsaroke *shōp*.

There are several Dakota expressions for 'pairs' and 'doubles'; *napin* (from *nape* 'hands'?) 'they two,' 'both,' *sakim* 'two together,' and from the numerals, by the prefix *ta*, as *ta-wa"zhi* 'a pair,' *ta-no"pa* '2 pairs,' *ta-yamni* '3 pairs.' In *tano"pa*, or rather in the earlier *ta-o"pa*, *ta-ópa*, '2 pairs,' we have, I think, the origin of *topa* 4.

In some languages 'all the fingers' give the name to this numeral, as, apparently, in Pawnee *skítiks* 4, = *skēts-iks* 'fingers [of] hand.'

5. There is much diversity, even in languages of the same stock, in expressions for 5 and 10. In these sometimes, but by no means always, is found a name of 'hand' or 'fingers,' or a suggestion of such name. In the instances — comparatively few — in which names for 'hand' and 5 are identical, or nearly so, we cannot confidently decide which of the two is borrowed from the other.[7]

Of Algonkin 'fives' there are two principal types:

(1.) Massachusetts *napanna*, meaning 'on one side,' i. e. 'one of the two hands.' It is the Chip. *nabane*, Cree *nabat*, but is not in either of those dialects used for the numeral. In Abnaki *bare-nesku*, Del. *palena*CH, the name for 'hand' is added, the expression corresponding to Chip. *-bane-nindj* 'of one hand,' as in *ningoto-bane-nindj* 'one handful,' *nin*

[7] "A. v. Humboldt's plausible comparison between Skr. *pancha* 5, and Pers. *penjeh* 'the palm of the hand with the fingers spread out, the outspread foot of a bird,' as though 5 were called *pancha* from being like a hand, is erroneous. The Persian *penjeh* is itself derived from the numeral 5, as in Skr. the hand is called *panchaçâkha* 'the five-branched.' The same formation is found in English; slang describes a man's hand as his 'fives,' or 'bunch of fives,' thence the name of the game of fives, played by striking the ball with the open hand, a term which has made its way out of slang into accepted language."—Tylor's Primitive Culture, i. 235, note.

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nabane-nindj 'I am one-handed,' 'have only one hand,' etc. The Abnaki *na"neda* '5 times' and *na"na"kao* 'fifteen' (=5+) are from a different root, and are related to

(2.) Chip. *nánan*, Cree *niannon*, *niyânan*, Micm. *nān*, Moheg. *nunon;* and Shawano *nialin-ui*, Miami *yàlan-ué*, Illin. *miaran-ui*, etc. These, though perhaps not all from the same root, have nearly the same meaning, 'gone,' or 'spent,' i. e. all the fingers of one hand. Comp. Cree *niyân* 'va, pars,' pl. *niyânk* 'allez, partez,' a "verb used only in these two persons of the imperative"; *niyâk* 'forwards,' 'onward' (Lacombe, Dict. Crise); Shawn. *niala*, Illin. *miara* = Cree *niyân.*

Dakota 'fives' are plainly *digital:* Dak. *zápta"*, Om. *sátan*, Ponka *sáta*, Iowa *tháta*, Osage *sattah*, Winneb. *satch;* Hidatsa *kíCHu*, Mandan *keCHūn*. Dak. *zápta"* = *za* (for *suka-za* 'fingers') + *pta"* 'turned down.'[8] Hidatsa *kíCHu*, from CH*u* 'thrown down' or 'overturned,' with *ki*, the intensive and frequentative prefix, 'wholly, completely,' i. e. 'all turned down.' Or, if we suppose the word to have lost a syllable, and restore it as *sáki-CHŭ*, we have 'hand turned-down' = Dak. *za-pta"*.

Choctaw *tahlapi* 5, seems to be compounded of *tahli* 'to finish' or 'complete' and *ahpi* 'the first' = 'first hand ends.' In Muskoki *chagh'kih'pĭn*, and Hitchitee *chaghkü'pun*, the Musk. *chunggi* or *chuñki* 'my hand' may perhaps be recognized, but if so, it is nearly lost in the Musk. ordinal, *hlisa cholíkepe* 'fifth.'

Pawnee *si"hūks* is from *iksu-hūks* 'hands half'; still more contracted in Arikara *she'hu* (*ishŭ* = 'hand').

In the Athapascan, *la* 'hand' seems to be found in Navajo *ást-la*, Apache *ásht-la* 5; but only in these two of the eleven languages of that family compared by Buschmann, who remarks on the general resemblance of the Athapascan 5 to the 1. Eskimo (Labrador) *tedli-ma*, *tellimet* 10, is probably related to *tallek* 'hand.'

[8] This agrees nearly with the meaning given by the Rev. A. L. Riggs (in his letter of July 27th): "*Zapta"*. Roots ZA and PTAN. *Za* is 'the hand'; thus, *yu-za* is 'to hold,' 'to handle.' *Ptan* is 'turned over.' The whole of the *hand* [i. e. all the *fingers*] is now *turned down.*"

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In the Shoshoni family, Comanche *mowaka* (*mowa* 'arm, hand, fingers,') and in another dialect *mo'ovet* (*moö-oyet* 'hand all'), Shosh. *manáget*, Yute *manigin* (*moo-ninch* 'hand'), all give evidence of their *manual* origin.[1]

6. Names for this numeral in Algonkin, Dakota, and some other families of language, mark it as the first that is counted on the second hand. This is done (1.) by affixing to a name for 'hand' a particle meaning 'one,' 'first,' or 'other,' or (2.) by repeating the name for 1 and affixing a word meaning 'again,' 'besides,' 'beyond,' 'more,' or the like, or (3.) by merely expressing change 'to the other side.' Of these, the second is the most common type: e. g. —

ALG. Cree *nikoto-wasik*, *nikūt-wassik* = '1 on the other side' (Cree *awas* 'further on,' *awasâ-yik* 'on the other side'), Chip. *ningot-wásswi* (*awássaii* 'further'), Abn. *nekūda"s*, Moh. *n'guittus*, Shaw. *nigote-wathwi*, Sauki *kotoashek;* Mass. *nequtta-tahshe*, Del. *quttasch* (the affix, *adtahshe*, means 'counted' or 'added'). — Micmac *ashugōm* (*apch* 'again,' 'following'; *apchku* 'going back'), and Mareschit *kámachin*, seem to be similarly formed. — Illin. *kakatchui* 6 denotes 'passing beyond the middle' (*kakatahe*). — Shyenne *nasutu* (*nahsoto*, Abert) is 'one over.'

The DAKOTA presents two types — which, however, may prove to be originally identical:

Dakota	*shá-kpe*	Hidatsa	*aka-wa, aka-ma*
Assiniþ.	*shá-kpa*	Winneb.	*aké-we*
Om. and Ponka	*shá-pe*	Aubsaroke	*ki-ma*
Iowa	*sha-kwe*	Mandan	*aká-mak*
Osage	*sha-pah*		
Oto	*sha-kwa*		

Hidatsa *m* and *w* = Dak. *p*. The only question is as to the precise meaning of the Dakota prefix. Dakota *pe* is 'finger' or 'fingers' (hand 'points,' as in *napchu-pe*, etc.), as is more clearly shown by Ponka 7, *pe'namba* (= 2 fingers), and 8, *pe'thabthin* (= 3 fingers). The prefix I take to be Dak. *a-kshá* 'more, in addition to.' Then *shákpe* = *a-kshá-pe* = '1 in addition' or 'besides' (the 5); and Hidatsa

[1] For other 'fives' of Buschmann's Sonora family, including the Shoshoni, see his Grammatik d. Sonor. Sprachen, 3te Abth. ss. 114, 119.

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akáwa = *aká-ma* 'one over'; comp. Assinib. *akán* 'above,' *haké-cha* 'afterwards,' &c.[2]

In the Athabascan family, Buschmann[3] finds 6 expressed by 3×2 in five languages (of eleven compared).

7, 8. The composition of these numerals from 2 and 3 is as common in American as in other families of speech. An independent name for either 7 or 8 is exceptional. The 8 is sometimes designated from its proximity to 10 — as 'two less,' 'two left,' or as 'coming near' the end; 7, more rarely, as 'wanting 3,' or the like. The common expression for both numerals is formed by affixing to the names for 2 and 3, respectively, a word denoting *addition* or *repetition*. In some languages, an indication of 'hand' or 'finger' is comprised in the name. The Algonkin 7 has generally the same affix as the 6, meaning 'on the other side' or 'again.' The full expression is preserved in Chip. *nij-wásswi* 7, *nish-wásswi* 8; compare *ningot-wásswi* 6: a contracted form, in Del. *chash* and, with a guttural modification, in Moh. *ghusū*. The Cree and Chippeway languages have each another name for 7: Cree *tépakūp* (*téypuckoop*, Howse), Chip. *tupouwus* (=*tepu-awasswi*), the latter agreeing with the Abnaki 7, *ta"bawa"s;* all formed from a 'two' which is not now found in any Algonkin language except the Micmac (see p. 58, ante). The Crees have also two names for 8: *shwâssik* (=*nishu-awâsik*) and *aienânewu* or *ayenâneū*. The latter is peculiar. It seems to be formed of *iyin* 'more' and *néwu* 4='4 again' or 2×4. An exceptional name for 7 is found in the Narragansett *énada* (Mass. *enotta* of Wood's Vocabulary); perhaps related to Mass. *nahohtoë'u* 'second,' literally 'that which comes next,' or perhaps from the index-finger and act of 'showing' (Mass. *nâtin-au* 'he shows it to,' Chip. *enoad* 'showing with the fingers'). The Sauki 7, *nówia*, may have had a similar origin.

Illinois *parare*, Miami *polâne* 8, mean 'nearly ended,' 'almost done.' The composition of Illin. *suatatchūi*, Mi. *suaχtetsūi* 7, is not clear.

[2] The Rev. A. L. Riggs has suggested a different derivation of Dak. *shakpe* "from *shaki* 'the nail' and *kpa* or *kpe* 'punched out.' The prominent thumb nail of the second hand is now pushed down."

[3] System. Worttafel d. Athap. Sprachstamms (3te Abth. des Apache), s. 508.

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In the Chahta-Muskoki group we have —

Choctaw	*tuklo* 2,	and	*un-tuklo* 7.
	tuchina 3,		*un-tuchina* 8.
Coassatti	*tókolōō* 2,		*hon-tókolōō* 7.
Alabama	*tókoló-chie* 2,		*hon-tókoló-chie* 7.

The prefix *un-* or *hon-* (=Choctaw *ont*) means 'again.' In other languages of this family, the names for 2 and 3 are similarly modified by a *suffix:*

Musk.	*hokkolen* 2,	and	*kólŭ-paken* 7.
Hitchiti	*tokhlun* 2,		*kola-paken* 7.
Musk.	*tutchenen* 3,		*chenŭ-paken* 8.
Hitchiti	*tohchiínŭn* 2,		*tósna-paken* 8.

One of Mr. Ellis's mistakes is that of regarding these adverbial affixes as representatives of names for 'hand' or 'finger,' or 'five'; and some of the most striking of the coincidences that seem to him "to exhibit the radical affinity which unites the North American languages" vanish with the correction of this error. He finds, for example, his "*az* finger" or his "*baz* finger," or the two combined as "*azbaz* 'finger-finger'=hand," in Delaware *cottash* 6, *nishash* 7, old Algonkin (Nipissing) *ninshwassoo* 7, *nisswassoo* 8, Cree *nikūtwassik* 6, *nishwassik* 7, etc.[4] Whatever the Basque *zaz* (conjecturally extracted from Basque *zazpi* 'seven') or a possible *svas* of "the original Aryan vocabulary" may have denoted, it is certain that in the Del. *-ash*, Alg. *wassoo*, Cree *wassik*, etc., we have merely an adverb meaning 'further,' 'on the other side,' or the like.

In the (semi-Algonkin) Atsina dialect, 7, 8, and 9 are formed respectively from 3, 2, and 1, by a suffix that denotes the 'fingers' remaining to be counted.

In the Dakota family, there are at least two and perhaps three types of 'sevens':

Ponka	*pé-nanba*	Dak.	*shakó-wi*[n]	Hidatsa	*shápua*
Omaha	*pé-namba*	Assinib.	*shakó-wi*	Aubsar.	*khápua*
Osage	*pá-nompâ*	Winneb.	*shagó-wi*	Mandan	*kúpa*
		Iowa	*sháhma*		

The first three prefix to 2, *pé*, *pá* 'fingers' (lit. hand 'points'). Of the others, I find no satisfactory analysis that

[4] Numerals as Signs of Primeval Unity, pp. 7, 8, 9.

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will apply to both groups. [The Rev. A. L. Riggs has suggested, for the Dakota proper, *shake* 'a nail' and *win* 'to bend,' with the preposition *o* 'in' or 'on' interposed, the fore-finger (of the second hand) being *bent upon the nail* of the previously turned thumb.]

The Ponka and Omaha 'eights' are formed like the 'sevens'—by prefixing *pe* to 3; the Hidatsa and Aubsaroke, by suffixing *pe*, *pi*, to 2, the numbers of fingers remaining uncounted:

Hidatsa *dópa* 2,	*dópa pi* 8,	(*pítika* 10).
Aubsar. *nōp* 2,	*nōpa-pe* 8,	(*píraka* 10).

Dr. Matthews (Hidatsa Grammar, 56) remarks that *dopapi* probably signifies 'ten less two,' and that *pi* seems to be the root of *pítika* 10. But the primary meaning of *pi*, *pe*, is 'pointed' (or as a verb, 'to penetrate'), and hence 'point,' 'extremity,' 'finger,' as in Hid. *icpu* and *ichpu* = Dak. *chupe* in *nap-chupe* 'fingers,' i. e. 'hand points.' In *icpe* 'the tail of a bird,' Dak. *upi*, we have another modification of this root; and again in Hid. *ipí-ta* 'at the rear, behind,' i. e. 'at the end.'

Iowa *kre-ra-pa-ne* 8, is clearly related (as a diminutive?) to *kre-pa-na* 10. Dakota *sha-hdo'gha*ⁿ and Assinib. *shakando'-ghah* follow the 'sevens,' the first element of the name being the same in each, but I must leave both—with Mandan *tetuk'e*—unexplained.

9, very generally, is named as being the 'last but one'; occasionally, as 'fourth' of the second hand:

Alg. Cree *kéka-mitātat* 'almost 10.' √*keka* 'an point de.'
Chip. *sháng-asswi* (and contr. *shang*); comp. *chágisse* 'used up,' 'all spent.'
Shaw. *chakatswi* " " " "
Mass. *paskugun* 'it comes near.'
Del. *pechkunk* 'coming near.'
Illin. *nigutu-manekki* 'only one left,' lit. 'only one, no more.'
Arapoho *thiatokh'* or *siatokh'* 'again last,' 'one after'; from *chía* 'again' and *tákh* (comp. *tákh-su* 'last,' *takhú-ŭ* 'after').

Dak. Omaha, Osage, and Ponka, *shánka*, Iowa *shangke*. Sioux *nap-chiⁿwanka*. Prince Maximilian von Wied notes the Osage as a contracted abbreviation of *grābena-tcheh-winingka* = 10 less 1. This is certainly the *meaning*, but not a *translation* of the name. In the Sioux, *nap* = *nape* 'hand.' In other dialects, *shánka* is Iowa *iyangke* 'one,' 'little one' (and, as diminutive, *chínge*), Mandan *ingka* (as in *ungkni-ingka* 'the little finger'), Omaha *shínga* (redupl. *shínge-shínge* 'an infant,' very small), Sioux *chiⁿchá* 'little one,' and in *chi-ĸa-daⁿ*

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'very small' (with which compare *wanika-dan* 'very little,' *wa"ske* 'the fourth (female) child'). Sioux *chi"wanka* in 9, seems to contain an additional element, which may be *eché* 'only' or *echi"* 'now.'[5] The meaning is the same, in all these dialects, 'only one finger' remains.

Hidatsa *duetsa-pi* and Aubsaroke *amáta-pi* have the same meaning — 'one finger'; and so has Mandan *maCH'pe*, from *maCH'ana* 1.

CHAHTA-MUSKOKI. Choctaw *chakali* 9 = *cheki-ŭlli* 'soon the end,' next the last. [The root, *cha, che,* is the nearest approximation to a conjunction copulative, and may be translated 'and then,' or 'next.'] The same component is in Alabama *ibi-cháhkali-chíe* (*chíe* = finger) and Coassatti *bih'chákaälii'*. Musk. *ōs'ta-páhkin* and Hitchiti *ōsta-pákin,* are from Musk. *ōstin,* Hitch. *sitákin,* 'four.'

NATCHEZ	*witip'katipis,* 1 left?	from *wíta* 1.
CADDO	*hiwéisika,* 4 + hand,	" *hiweit* 4, *séCHe* 'hand.'
Adaiz	*sikinish,* 'hands' minus?	" *sekut* 'hand.'
PAWNEE	*d'hūk'sidi-wa,* 10 minus,	" *d'hūksidi* 10.
Arikara	*nuCHini'wan,* "	" *nuCHini* 10.
Wichita	*chíus-skinte,* 1 left?	" *chíus* 1.
Kichai	*tanerókat,* ?	(*arísko* 1).
SHOSHONI	*shimmér·omen,* 10 minus?	" *shimmer'* 10.
Comanche	*shéman'-uwum,* "	" *shéëman* 10 (Pike, MS.).
"	*se'ermano,* "	" *se'ermano-wúmpnet* 10.
Yute	*surrom-suene,* "	" *tom-suene* 10.
"	*suwárroümsoyuni,* "	" *tóamsuniyuni* 10 (Powell, MS.).
YUMA: Cuchan	*hum-hamook',* 3 × 3?	" *hamook'* 3 (*humhook* 6).
Mojave	*pai'a* 'near'	" (*hipau'ac* 'near').
"	*elyu-thouk* 'near'	" (*thowk* ").

10 The tenth finger — the *little* finger of the second hand — gives in some languages a name to the corresponding numeral; but more often, 'ten' is designated as the 'completion' of the digital series, 'all gone,' 'none remaining,' or the like. Occasionally, the name may have been taken directly from the 'hands' or 'all the fingers.'

In ALGONKIN languages, the 'tens' are of four types — of which two are nearly related:

1. Chip. *midasswi, mitasui,* Illin. *matatchui,* Shawano *metathwi,* Cree *mitatat,* Shyenne *matoCHto,* Arapoho *metaitoCH,* and Atsina *matatasits* — meaning 'no further,' 'completed.'

[5] I formerly regarded this *chi"* as the representative of the verbal root *chi"* 'wanting.' To this, the Rev. A. L. Riggs objects, with good reason, that "*chi"* is not 'want' in the sense of 'lack,' but always of 'desire';" and that, if it made part of the name, "it should come *last,* as the principal verb." I do not agree with him, however, as to the impossibility of getting 'one' (or rather 'finger,' or '*little* one') out of *wanka.* The other related dialects seem to testify unmistakably to this meaning.

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2. Abnaki *m'tára*, Micmac *m'teln*, Delaware *m'tellen*, *tellen*, Moheg. *m'tannit* = 'no more.'

3. Massachusetts and Narraganset *pai'uk*.

4. Sauki and (Northern) Chippeway *kwetch*, used occasionally in rapid counting. This is either a contraction of *iskwátch* (Cree *iskweyâtch*) 'lastly,' 'at the end' (comp. *ishkwétchagan* 'the last or youngest child in a family'), or it is Nipissing-Algonkin *kagowetch* 'no more.'

The prefix in Illin. *mat-atchui*, Chip. *mid-asswi*, Abn. *m't-ára*, etc., is the negative and privative particle, found in all Algonkin languages, though less common in Chippeway than in eastern dialects. It is found, however, as a prefix, in many Chippeway words (e. g. *nin géssikan* 'I arrive in time,' *nin med-assikan* 'I do not arrive in time,' 'I am too late'; *nind apáb* 'I sit upon' (a seat), *nin mit-ab* 'I sit upon the bare ground, the snow, or the like,' 'have nothing to sit upon'; etc.). As a verbal prefix, it has sometimes, with a modified vowel, the meaning of 'ceasing,' 'leaving off,' 'completing'; e. g. Mass. *mahtu* 'he ceases speaking,' Abn. *met-anaskiwi* 'finally,' Illin. *mita-tewi* 'an abandoned cabin,' *ni metassa* 'I bury (i. e. have done with) him' = Chip. *mid-ágwena* 'I put him aside, or out of the way.'

The suffix *ásswi* is the same as in Chip. *ningot-wásswi* 6, *nishwásswi* 7, meaning 'further' or 'beyond.' At 10, there is 'no further' count, 'a completion.' Abn. *-ara*, Del. *-elen*, Moh. *-anit*, are forms of the same particle of comparison, meaning 'more,' 'above'; and *mid-ásswi* = *m't-ára*.

I have the more particularly pointed out the composition of this Algonkin 'ten,' because more than one writer on American languages has been struck by the likeness of Chip. *midasso* (the ordinal) 10 and *midáss* 'a legging.' Mr. R. Ellis[6] observes this likeness in six or seven Algonkin languages, and infers that "forms like *-doswe*, *-tathi*, *-tato*, *-tato*, etc., may be compared with Uchee (Florida) *tethah* 'shoes,' and *tetethah* 'feet,'" etc., all contributing to show that the "*az* finger" and the "*azbaz* hand" prevail, and are employed numerally, over the greater part of North America

[6] On Numerals as Signs of Primeval Unity, etc., p. 9.

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as well as on the eastern continent, "the *m-* prefix" in *midasso*, etc., "appearing the same as a Californian and New Mexican prefix *m-*, which is used to convert 'arms' into 'legs.'"

The learned author of "Études Philologiques sur quelques Langues Sauvages" (pp. 131, 132) has given an etymology of *mitasui* which is ingenious, but to which there is, I think, one insuperable objection. He derives the name from the particle *mi* 'so,' and *tasui*, *taso*, "a particle that expresses quantity and is the equivalent of [the French] adverbs *tant*, *autant*, *combien*." When an Indian would express 'ten,' he puts forward both hands and spreads the fingers saying, *mi-tasui* 'so many.' The objection to this is, that it will not apply to other Algonkin dialects, nor to other numerals in the same dialect: it will not serve either for Abn. *m'tára* and Crée *mitatat* 10, nor for Chip. *ningotasui* 6, *changasui* 9, etc., in which M. Cuoq finds, not *dasso* 'so many,' but *asui* "en sus, de plus."

In the Massachusetts and Connecticut dialects another name is found for 10, *paiuk* (*piuk*, *piogqué*, Eliot), but the Chippeway *mitasui* is represented in Mass. *muttásons* 'the youngest child in a family' (*mat-ásŭ* 'not after,' with *-ons* diminutive), and in *muttaso-nitch* 'the little finger,' i. e. the least and last. Mass. and Narrag. *paiuk* is, probably, a similar expression, related to *pesuk* (=*pi-es-uk*, dimin. of *pi-ak*) 'least,' 'one *only*,' and to Cree *peyak* 'one,' 'alone,' as well as to *piko* 'only,' 'no more than,' and *piyis* 'finally,' 'lastly.'

The Dakota 'tens' may be reduced to two groups, the name having in both the same general meaning, but not formed from the same roots:

(1.) Sioux-Dak. and Assiniboin *wikchémna*, *wikchem'ini*.
Ponka *gthe-ba*.
Omaha *chräbene*, and *g'èth'ba*,[7] Iowa *krepana*, Oto *krahbra*", Osage *krabra*, Winneb. *kherapun* (or *kherapún-aze*, Hayden).[8]

(2.) Mandan *pirakh*, Aubsar. *piraká*, Hidatsa *pitika*.

[7] Prince Maximilian's vocabulary gives *chrabëne*; Dr. F. V. Hayden's (in Proc. Am. Philos. Society, x. 407), *g'èth'-ha*, but the second *h* probably is by misprint for *b*, since 20 is *g'th'eba-namba* 'two tens.'

[8] In this group of Dakota 'tens' we have a good illustration of one difficulty in

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At 10, the fingers that have been bent down are *straightened*, and "the hands *spread out* side by side."[9] *Wikchemna* is from *kcha* 'straight,' 'unbent,'[1] and *mna* 'spread out,' with the *generalizing* prefix of Sioux nouns, *wi* or *w'*. Hidatsa *pitika* is from the verb *ptíki* "to smooth out, to iron clothes," which Matthews (Hidatsa Dictionary) refers to *pakíti* (from *kiti*) 'to press to smoothness *with the hands*.'[2] Both expressions "gehn aus von den Fingern," but in neither does a *name* of 'finger' or 'hand' show itself.

How slowly the savage advanced in numeration may be inferred from the traces found in many languages of a mode of reckoning by *pairs* and *triplets*. There are some reasons for believing, not only that conceptions of 'one,' 'two,' and 'three' (as 'this,' 'that,' and 'beyond' — or the like) were antecedent to digital numeration, but that the first definite conception of 'four' was as a 'pair of pairs,' and that *multiplication* of the lower numbers often preceded formal numeration to the higher. *Number* begins at 'two,' and we may assume — without venturing far into the 'metaphysics of language' — that 2 was the *first named* numeral, though an earlier *conception* may be expressed in the name given to **1**. Considering that every decimal system is in fact a doubled quinary, and was constructed with as constant reference to

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the way of proving — or disproving — the 'primeval unity' of American speech, on no better evidence than is afforded by brief and often inaccurate vocabularies. In *wikchemna* (discarding the prefixed particle), *gtheba*, and *kherapun*, the same name appears under three dialectical variations: *kche-mna* = *gthe-ba* = *kh'ra-pun*. And the results of 'laziness' and 'emphasis' are so nearly balanced that — tried by the Indo-European standard — it would be hard to say which of the three forms best represents the primitive roots.

[9] The Rev. A. L. Riggs, MS. The derivation he suggests for *wikch'emna* is "from *w*, the sign of the abstract form, *ikche* 'in a common manner,' and *mna* 'gathered together.'"

[1] *ksha* 'bent,' *yu-ksha'* 'to bend, to fold, to double'; *kcha* 'straight,' 'loose' (*un*-bent), *yu-kcha'* 'to untie, to loose,' etc. *yu-kcha*ⁿ 'to understand, to comprehend' (i. e. to straighten out?).

[2] If the Hidatsa *pítaka* stood alone — the more probable derivation would be from *ipí* 'extremity, end,' as in *ipíta* 'at the rear, behind,' and *ipítakoa* 'at the end'; which last might have been contracted to *pítaka*. But the meaning of the name in other Dakota dialects — 'unbent' — favors *ptíki*, notwithstanding the change in accent.

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the number of the hands as of the fingers, numeration by pairs would seem to be a natural expedient for rising to the higher numbers.

In various North American languages of the West and Southwest, we find 'fours' formed from 'twos,' 'eights' from 'fours,' and, more rarely, 'sixes' and even 'nines' from 'threes.' East of the Rocky Mountains, traces of similar numeration are uncommon. The Dakota *tópa* 4=2 pairs, has been mentioned (p. 63). The Catawba (North Carolina) *purre-purra* 4, apparently comes, by reduplication, from *na-perra* 2; but both may have been derived from a common root, found also in *du-punna* 1, *pukte-arra* 5, and *dipk-urra* 6. In the (Algonkin) Cree, one of the two names for 8 is *ayenâneū*, which seems to be a 'double 4' (see p. 66, ante); and in the semi-Algonkin Shyenne, *nōCH* is 1, *enōka* 'a pair'; *ñiCH* 2, *eniCH-anst* '2 pairs,' *ni-nish-ish'* 'you two'; *na'a*, *nā* 3, *e-na-hanst* 'a pair of threes,' '3 pairs' (Hayden).

In the Athabascan family, Buschmann's comparison of the numerals in twelve languages gives these results: 6 has an independent name in six languages and in six others is formed as 2×3 or 3×2; 8 is expressed as 4×2 in eight languages, and 9 is formed on the 3 in only one.[3]

For example, in the northern Athabascan, Howse's vocabularies[4] give—

Chepewyan	3, *tahhee*,	6, *elke tahey*.	
	4, *dinghee*,	8, *ellkee dinghe* (also *narky-ah-ahtah* = 2 less).	
Biber	2, *onghaty*,	} 8, *enchet'hentir* (2×4).	
	4, *tenter*,		
	3, *tâhtir*,	6, *enchet'hâty*.	

In the southern branch of this family, the same system may be found, though less distinctly marked:

Navajo 3, *t'ha*, 6, *has-tár*, 9, *nas-taĭ*.

In another family, the Shoshoni (classed by Buschmann with the Sonora), doublets and triplets are common:

Comanche	3, *pa-hist*,	6, *óyoh-pafist*.
Chemehuevi	3, *paĭ*,	6, *na-baĭ*.
	2, *waĭi*,	4, *wat-chu'*.

[3] Worttafel d. Athapask. Sprachstamms (3te Abth. des Apache), § 114, n. 2.

[4] Proceedings of the Philological Society (London, 1850), iv. 192 ff.

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Shoshoni	2, *wat,*	4, *wat-suit.*	
Cahuillo	2, *mewi',*	4, *mewi'chu.*	
Kizh	2, *huehe,*	4, *huatsa,*	8, *huehesh-huatsa.*

In one Yuma dialect, the Cuchan, we have

3, *hamook',* 6, *humhook',* 9, *hum-hamook;*

though in the Mojave, of the same group, the 6, 7, and 8 are regularly formed as 1, 2, 3 of the second hand.

The numeral system of the Arikaras is peculiar, and deserves special notice. The Arikaras, or 'Rees' as they are called by the French traders, were originally the same people as the Pawnees of the Platte River, their language being nearly the same.[5]

The first five Pawnee and Arikara numerals correspond nearly. From 6 to 10, the Pawnees proceed in the more common mode, by repeating 1, 2, and 3, as 'added' to 5, or 'of the second hand,' and naming 9 as 'less than 10.' The Arikaras named 8 from 6 (by prefixing a particle), and the odd numbers 7 and 9 by a diminutive suffix to the name of the next *higher* even number: thus,

6, *sha'pis*	8, *tup-sha'pis*	10, *nukh-iní*
	7, *tup-sha'pis-wan*	9, *nukh-iní-wan*

And so with occasional variations, numeration proceeds to 20, which is 'a man'—for the system is vigesimal; 12 is 2+10; 11 is (2+10) *minus;* 13, *nákugit'-wan,* is 'less than' 14, *nákugit',* which, again, seems to have been formed from 15, *akh'kogit'u* (=*akh'u git'u* 'the whole foot'). In the next quinate the names *all* come from the 20, *wi-tau'* (*wíta* 'a man'), those of 16 and 18 being the less composite and probably the older:

20, *wītau'*	18, *wītau'-an*	16, *wītūtch'*
19, *wītau'-akhko-káki*		17, *wītutch-iskugit.*

The 19 is literally 'man one-not.' Dr. Hayden's vocabulary gives the numerals as high as 1000, and similar derivation of

[5] Dr. F. V. Hayden's "Contributions to the Ethnology and Philology of Indian Tribes of the Missouri Valley" (Philadelphia, 1862), p. 351. His Arikara vocabulary is the best and largest yet published. For the Pawnee numerals, I use his "Notes on the Pawnee (and other) Languages," in Proc. Am. Philos. Society, vol. x. (1868), pp. 389 ff.; and for the Arikara, have compared Prince Maximilian Wied-Neuwied's vocabulary (Reise, T. II. s. 465 ff.), and that of Geo. Catlin, in "Letters and Notes on the N. A. Indians," ii. 262.

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lower from higher numbers is observable throughout, combined with the common expedients of vigesimal notation:

30, *sawi'u* (*saüï*, Maxim.)	40, *pit'iku-nanú* = 2 persons
32, *wītau-pitikōkh'ini* = 20 + 12	38, *pitikunanu-wan* = 40 −
31, *wītau-pitikunūkh'ini-wan* = (20+12) −	39, *pitikunanu-akhokaki* = 40, 1 not

100 is '5 men,' 98 is '5 men *minus*,' and 99, '5 men, 1 not'; and so on.

I will not add to the length of this paper by pointing out its shortcomings. It is offered not as a contribution to American linguistics, but with the purpose of showing, by examples taken from a few families of American speech, that it is unsafe to assume uniformity in the conception or the expression of numbers, even in dialects of the same language, much less in languages whose affinity is not yet proved; and that it is equally unsafe to assume that the 'hand' or 'finger' always gives its own name to the number it serves to mark in digital numeration — in other words, that 'two' must = 'hands' or 'fingers,' and 'five' or 'ten' = 'hand'; that although a general correspondence of numeral series in two languages may justify the inference that both came from one stock, yet no evidence of such affinity is presented by occasional coincidences between single numerals in different languages or between the name of any number in one language and that of the 'hand' or 'finger' from which in another that name might have been derived; but that the value of such coincidences must depend on the analysis of the names and the ascertained meaning of their components or roots. I have thought it not impossible that, from a field as yet almost unworked, some of the results obtained in even so partial a survey might interest comparative philologists, as bearing on the question of the origin of ideas of number and the beginnings of the art of counting — antecedent to digital numeration.

The comparison of only a few dialects is sufficient to prove that the process of mental development in the apprehension of numbers has not been uniform. The Algonkin Indian and the Arikara have not taken the same way from the primary conception of number to the full decimal system. It is

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equally evident, that one tribe may have advanced further than another *before* resorting to finger-counting or establishing a regular sequence of earlier-acquired conceptions of number. The priority of the conception of 'one' to that of 'two,' or of 'three' to 'four' — or of the vocal expression of either conception — is not determined by priority in the numeral series. To one tribe, progression by *pairs* may have seemed as natural as progression by *units* does to those of higher culture; and the result would be a system — partially represented by the Arikara — in which the *even* numbers were the earlier named, and the odd numbers intercalated, just as differences by *halves* or other fractional parts might be intercalated in the Indo-European decimal system. The pre-digital numerals so formed might include the 4, the natural order being

2, 1, 4, 3,

that is:

a pair, less, 2 pairs, between (2 and 2×2).

Or it might stop at the 3, as *trans* 2. No evidence is found that any tribe has advanced beyond 4 without digital numeration, and there are few numeral systems in which some reference to the hand or the fingers may not be detected in the name either of 3 or of 4. But when 3 = 'middle,' 'between,' or 'half-way' — as in the Algonkin languages — it is not possible to decide whether this meaning comes directly from the 'middle finger' (half-way to 5), or from position between 'pair' and 'pair of pairs,' i. e. between 2 and 4.

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VI. — *On the Distinction between the Subjunctive and Optative Modes in Greek Conditional Sentences.*

By J. B. SEWALL,

PROFESSOR OF GREEK IN BOWDOIN COLLEGE, BRUNSWICK, ME.

In a discussion at the session of the Association last year upon the use of the subjunctive mode in Greek conditional sentences, it was maintained on the one hand, that the difference between the subjunctive and optative in these sentences was only that of more or less vivid presentation, that is, a difference of degree; on the other, that it was the difference of supposed fact as contingent and supposed fact as merely conceived, that is, a difference in kind. It is the object of this paper briefly to discuss this point.

If we turn to the four classes of particular suppositions in Greek conditional sentences,* and ask how the fact of supposition is presented in each case, the answer, I think, will be somewhat as follows.

In a conditional sentence of the first class, having in the condition εἰ with a present or past tense of the indicative, and in the conclusion the indicative without ἄν, or a verb of commanding, exhorting, or wishing, there is a simple supposition relating to the actual state of the case, to reality: e. g. Dem. Phil. i. 29, εἰ δέ τις οἴεται μικρὰν ἀφορμὴν εἶναι σιτηρέσιον τοῖς στρατευομένοις ὑπάρχειν, οὐκ ὀρθῶς ἔγνωκεν, 'if any one thinks it to be a small start for the soldiers to begin with ration-money, he is wrong.' The condition, εἰ δέ τις οἴεται, 'if any one thinks, or is thinking,' is question of what really is, a supposition relating to actual fact. No implication that the fact supposed is or is not actual is involved. Dem. Phil. i. 38, εἰ δ' ἡ τῶν λόγων χάρις ἔργῳ ζημία γίγνεται, αἰσχρόν ἐστιν, κ.τ.λ., 'if agreeableness of speech proves a harm to deed, it is a shame,' etc. Is it the fact? It either is or is not. The supposition relates clearly to actual fact. Xen. Mem. ii. 1. 28, ἀλλ' εἴτε τοὺς θεοὺς ἵλεως εἶναί σοι βούλει, θεραπευτέον τοὺς θεούς, 'if

* Goodwin's Greek Modes and Tenses, § 48.

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you wish the gods to be propitious, you must serve the gods.' 'If you wish.' Do you wish or do you not? It is question of actual fact. THUC. ii. 45. 3, *εἰ δέ με δεῖ καὶ γυναικείας τι ἀρετῆς μνησθῆναι, βραχείᾳ παραινέσει ἅπαν σημανῶ*, 'If it is needful at all for me to make mention, etc., I will declare all in a brief exhortation.' DEM. Cor. 52, *εἰ δ' ἀπιστεῖς, ἐρώτησον αὐτούς*, 'if you disbelieve, ask them.'

It would seem, then, that if we were to characterize a condition of the first class from the manner of its presenting the fact in supposition, we might call it a supposition relating to actual fact, generally implying nothing as to its existence in reality one way or the other, though sometimes assuming or taking it for granted.

In the second class, having in the condition *εἰ* with a secondary tense of the indicative, in the conclusion *ἄν* with also a secondary tense of the indicative, we have plainly a supposition implying the contrary to be the fact: e. g. DEM. Phil. i. 1, *εἰ μὲν περὶ καινοῦ τινὸς πράγματος προὐτίθετο λέγειν, ἡσυχίαν ἂν ἦγον*, 'if it were proposed to treat of any new subject, I should keep silence,' implying plainly that it is not proposed to treat of any new subject, and therefore he does not keep silence. Id. ib. 5, *εἰ τοίνυν ὁ Φίλιππος τότε ταύτην ἔσχε τὴν γνώμην, οὐδὲν ἂν ὧν νυνὶ πεποίηκεν ἔπραξεν*, 'if then Philip at that time had entertained this opinion, he would have done none of those things which he now has done,' implying that he did not entertain this opinion at that time, and therefore did do the things he has done. So always; and we may characterize a condition of the second class as a supposition implying the contrary to be the truth, or, for the sake of brevity, a supposition of contrary fact.

Passing for the time being the third class, having in the condition *ἐάν* with the subjunctive, we have for the fourth class a conditional sentence with *εἰ* and the optative in the condition, and the optative with *ἄν* in the conclusion. An example is DEM. Phil. i. 25, *εἰ γὰρ ἔροιτό τις ὑμᾶς, εἰρήνην ἄγετε, ὦ ἄνδρες Ἀθηναῖοι; μὰ Δί' οὐχ ἡμεῖς γε, εἴποιτ' ἄν*, 'for if any one should ask you, Are you at peace, O Athenians? No, by Zeus, we are not, you would say.' 'If any one should ask,

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you would say.' The fact of the supposition here is presented merely as hypothetical, merely as conceived, without reference or implication in any way as regards actual fact. Nor is it future any farther than a supposition of fact not a reality now nor in the past must be in the future if at all. The verbs in the condition and conclusion. ἔροιτο, εἴποιτε, are both in the aorist, which means that the Greeks eliminated the facts of the supposition from the element of time and held them in the mind as mere conceptions, never having been, not now being, never to be, in reality, so far as this assertion is concerned. Again, PLAT. Phaed. 67 E, εἰ φοβοῖντο καὶ ἀγανακτοῖεν, οὐ πολλὴ ἂν ἀλογία εἴη; 'if they should fear and complain, would it not be very absurd?' Here, again, the fact of supposition is purely hypothetical, placed before the mind as a conception without any reference or implication in relation to reality, likewise not future except as in the previous case. So generally. The optative mode in the conditional sentence is the mode of possibility, that which might be, the mode of fact simply as conceived or existing as a conception in the mind. Accordingly we may characterize a condition of the fourth class as a supposition of conceived fact.

We return now to the conditional sentence of the third class, ἐάν with the subjunctive in the condition, and a principal tense of the indicative, commonly the future, or the imperative, in the conclusion. PLAT. Phaed. 69 D, ἐκεῖσε ἐλθόντες τὸ σαφὲς εἰσόμεθα, ἐὰν θεὸς ἐθέλῃ, 'when we shall have arrived there, we shall know the truth, if God wills.' What is the force of the subjunctive ἐθέλῃ here? It expresses an action continuous, uncertain, and future: 'if God be willing' at that time. The continuousness arises from the tense, which is present; the futurity partly from the tense of the principal clause expressing the fact, a future one, of which this is the condition, and partly from the mode, which, it seems to me, we may describe as the mode of uncertainty or contingency, that is, the mode by which the Greeks chose to represent an action as uncertain or contingent whether in reality it was so or not. The principal verb, εἰσόμεθα, expressly declares a fact, 'we shall know,' but it is contingent, and the

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mode used to express that contingency is the subjunctive. What would be the force if the sentence were a conditional of the fourth class, that is, with the optative in both condition and conclusion, thus: *εἰδεῖμεν ἄν, εἰ θεὸς ἐθέλοι?* It seems plain that the assumed fact expressed by the words *ἐλθόντες ἐκεῖσε*, 'when we shall have arrived there' (into the future state), would be thrown back from an assumed fact into a simply conceived fact of condition, 'if we should arrive there,' and then the conclusion also would be thrown back into a simply conceived fact, 'we should know,' and the present condition, as expressing only uncertainty, would become a second condition, likewise of simply conceived fact, 'if God should will.' That is, the sentence in the first form positively declares a fact with a condition of mere contingency; in the second, it presents the fact merely as a conception and its conditions also as conceived facts. The difference therefore is not one of degree, more or less vividness, but of *kind*, mere uncertainty or contingency on the one hand, and pure conception on the other. Dem. Phil. i. 29, *τοῦτ' ἂν γένηται, προσποριεῖ τὰ λοιπὰ αὐτὸ τὸ στράτευμα ἀπὸ τοῦ πολέμου*, 'should this be done, the army itself will provide the remainder from the war.' What, again, is the force of the subjunctive here? *τοῦτ' ἂν γένηται*, 'should this be done,' 'if this shall have been done.' Is it not plainly question of fact which is uncertain, contingent, and not presented to the mind as a mere conception? If Demosthenes had said *εἰ τοῦτο γένοιτο, προσπορίζοι ἂν τὰ λοιπά, κ.τ.λ.*, would he not have meant 'if this should take place, the army itself would provide the remainder,' etc., presenting the fact merely as a conception in the mind? And is there not plainly here a distinction in kind — fact in the first place as contingent, in the second as purely hypothetical — and not of degree, as more or less vivid? Thuc. ii. 39. 4, *ἤν δέ που μορίῳ τινὶ προσμίξωσι, κρατήσαντές τε τινὰς ἡμῶν πάντας αὐχοῦσιν ἀπεῶσθαι*, 'if ever they have had an engagement with any small portion of our army, having conquered some, they boast that we all have been driven.' *Ἢν προσμίξωσι*, 'if they may have engaged.' What is the force of this subjunctive? It is an aorist — an action

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'brought to pass.' It is in the past, not future. There is nothing future about it. It is not the positive declaration of an act as a positive fact. The speaker, rather, most evidently wished to present the case as an *uncertainty*. It may have taken place and it may not, so far as he asserts. He wishes not to say that it has, but to grant that it may have, and to leave his hearer to believe rather that it has. It is the assertion in supposition of uncertain fact.

The last example is a general supposition,* and perhaps better illustrates the nature of the subjunctive mode than the third class particular. We will take another. EURIP. Alc. 671, ἢν δ' ἐγγὺς ἔλθῃ θάνατος, οὐδεὶς βούλεται θνήσκειν, 'if ever death comes near, no one wishes to die.' Here also is an aorist subjunctive in the condition, ἔλθῃ — aorist to signify that the fact is viewed as one 'brought to pass,' done and complete in itself whatever the time be, past, present, or future, and subjunctive to represent the fact as an uncertain one, 'if death may have come near.' This is a general supposition of the first class, denoting a general fact now true, and it is easy to see why the Greeks should have used the mode of uncertainty — the subjunctive — in the hypothesis, since the fact may or may not be at any given time, while they would use the mode of pure hypothesis, of mere conception — the optative — in a general supposition of the second class, where the case supposed is in past time. Compare, for example,

ἐάν τις τούτου πίῃ, ἀποθνήσκει, **and**
εἴ τις τούτου πίοι, ἀπέθνησκεν.

The first makes hypothesis of a fact which *may take place now;* the second, of a fact which possibly took place, which may be conceived of only as taking place, in past time.

The same may be seen equally well in conditional relative sentences. Compare

ὅ τι ἂν βούληται, δώσω, *I will give him whatever he may wish,* and
ὅ τι βούλοιτο, δοίην ἄν, *I should give him whatever he might wish.*

My conclusion then is, that the subjunctive in conditional sentences differs from the optative in that it is a form of the verb to represent the fact as uncertain, or, in general,

* Goodwin, Greek Moods and Tenses, § 51.

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contingent, while the optative is a form to represent it as merely conceived; and the difference between them is one not of degree, but of kind. And in accordance with what has been said, the four classes of conditional sentences particular may properly be described, viewing them with reference to the manner in which the fact of supposition is presented, the first, εἰ with the indicative, usually a primary tense, as a supposition relating to actual fact; the second, εἰ with the indicative, secondary tense, as a supposition relating to contrary fact, or implying that the contrary is the truth; the third, ἐάν with the subjunctive, as a supposition relating to contingent fact; and the fourth, εἰ with the optative, as a supposition of conceived fact.

VII. — *On the Age of Xenophon at the Time of the Anabasis.*

By CHARLES D. MORRIS,
of Lake Mohegan, Peekskill, N. Y.

The biographies of Xenophon represent that he was born in B. C. 444.or 443, and that he was in consequence forty-three or forty-two years old at the time he joined the expedition of Cyrus. So far as I have been able to examine the current authorities, I do not find any who do not give their adhesion to this view. The life of Xenophon prefixed to the edition of Prof. Anthon, which is mainly taken from that in the Penny Cyclopedia, that in the edition of Prof. Boise, that prefixed to Kühner's edition, and that in Smith's Dictionary of Biography, are unanimous on this point. These all acknowledge their obligations to a tract of C. G. Krüger, published at Halle in 1822, entitled "De Xenophontis Vita Quaestiones Criticae," which I have unfortunately been unable to procure or even to get a sight of, and I can in consequence deal with it only at second hand.* Sir G. C.

* Since this paper was read, Mr. A. Van Name, Librarian of Yale College, kindly sent me a volume containing a number of Krüger's philological papers, and among them this discussion of Xenophon's age. I find that the "lives" above referred to have extracted all that is of weight in it, and the perusal of it has not led me to alter my own opinion in any degree.

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Lewis, also, in a note on a learned article in the Classical Museum (vol. ii. p. 17), says incidentally: "Xenophon was about forty-two years old in B. C. 401, and consequently was born about 443." Clinton, indeed, in his Fasti Hellenici (sub ann. 401), though he holds the same opinion, refers to a note in Mitford's History of Greece, in which the latter, rejecting the main authority for the current belief which I will quote presently, attempts to establish that Xenophon was not more than thirty years old at the time of the Anabasis by two arguments which Clinton quotes and of which the one cannot be verified and the other is not true. This is unfortunate for me, as I purpose to maintain the view which Mitford adopted and to press it even further than he did; and it is with reluctance that I am thus compelled to discredit by anticipation my own position. Moreover, Prof. Boise, still, I presume, following Krüger, refers to several of the points, which I shall adduce, only to reject their force. But I think that the present case is one in which the whole power of an argument is lost if it be merely alluded to and not stated in full, and therefore I hope you will allow me to consider as an open question one supposed to have been long ago settled, and to lay before you the evidence on both sides.

My own early impression of Xenophon's age at the time of the Anabasis was derived from a passage in Bacon's "Advancement of Learning," which I shall venture to read.

"And here it were fit to leave this point touching the concurrence of military virtue and learning; for what example would come with any grace after those two of Alexander and Caesar? were it not in regard of the rareness of circumstance that I find in one other particular, as that which did so suddenly pass from extreme scorn to extreme wonder; and it is of Xenophon the philosopher, who went from Socrates' school into Asia, in the expedition of Cyrus the younger against King Artaxerxes. This Xenophon at that time was very young, and never had seen the wars before; neither had any command in the army, but only followed the war as a voluntary, for the love and conversation of Proxenus his friend. He was present when Falinus came in message from

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the great king to the Grecians, after that Cyrus was slain in the field, and they a handful of men left to themselves in the midst of the king's territories, cut off from their country by many navigable rivers and many hundred miles. The message imported that they should deliver up their arms and submit themselves to the king's mercy. To which message before answer was made, divers of the army conferred familiarly with Falinus; and amongst the rest Xenophon happened to say, 'Why, Falinus, we have now but these two things left, our arms and our virtue! and if we yield up our arms, how shall we make use of our virtue?' Whereto Falinus, smiling on him, said, 'If I be not deceived, young gentleman, you are an Athenian, and I believe you study philosophy, and it is pretty that you say; but you are much abused, if you think your virtue can withstand the king's power.' Here was the scorn; the wonder followed; which was that this young scholar, or philosopher, after all the captains were murdered in parley by treason, conducted those ten thousand foot, through the heart of all the king's high countries, from Babylon to Graecia in safety, in despite of all the king's forces, to the astonishment of the world, and the encouragement of the Grecians in time succeeding to make invasion upon the kings of Persia, as was afterwards purposed by Jason the Thessalian, attempted by Agesilaus the Spartan, and achieved by Alexander the Macedonian, all upon the ground of the act of that young scholar."

It was, I confess, with a certain amount of dismay that, when it became my duty to teach boys their Xenophon, I found that this spirited sketch of Bacon's must have its most characteristic touches blotted out; that probably it was not Xenophon at all who was the object of Phalinus's scorn; and that, if it was Xenophon, he was no youthful inexperienced scholar, but a middle-aged veteran. In the passage of the Anabasis referred to (ii. 1. 12), the best MSS. read Θεόπομπος. Krüger indeed maintains that Ξενόφων is the true reading, and thinks that the name Θεόπομπος crept into the text from a marginal note of a scholiast, which may perhaps have been Θεόπομπος δὲ Πρόξενον τοῦτο εἰπεῖν φησί, as in

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fact the *mot* is attributed to Proxenus by Diodorus. I myself am glad to agree with Krüger in his conclusion on this point, as it is probable that the historian Theopompus in his σύνταξις Ἑλληνικῶν did treat at length of the expedition of Cyrus, and there is no other indication in the Anabasis that an Athenian of that name was present in the army. I do not, however, consider that the point I wish to establish needs any such repudiation of MS. authority; and I shall therefore leave Theopompus in the enjoyment of such credit as this single incident can give him.

The only argument adduced in support of the assumption that Xenophon was born about B. C. 444 is the fact that Strabo and Diogenes Laertius report that Xenophon was present at the battle of Delium, which occurred in the latter part of B. C. 424, and was saved in the subsequent flight by the intervention of Socrates. Strabo's story is as follows.

In his description of Boeotia, he comes to the south-easterly corner, and says: εἶτα Δήλιον τὸ ἱερὸν τοῦ Ἀπόλλωνος ἐκ Δήλου ἀφιδρυμένον, Ταναγραίων πολίχνιον, Αὐλίδος διέχον σταδίοις τριάκοντα, ὅπου μάχῃ ληφθέντες Ἀθηναῖοι ἔφυγον· ἐν δὲ τῇ φυγῇ πεσόντα ἀφ' ἵππου Ξενοφῶντα τὸν Γρύλλου ἰδὼν κείμενον Σωκράτης ὁ φιλόσοφος στρατεύων πεζός, τοῦ ἵππου γεγονότος ἐκποδών, ἀνέλαβε τοῖς ὤμοις αὐτοῦ καὶ ἔσωσεν ἐπὶ πολλοὺς σταδίους, ἕως ἐπαύσατο ἡ φυγή. (Strabo, Book ix., p. 403, Ed. Cas.) Diogenes Laertius, in his life of Socrates (ii. 22), speaks as follows: ἐπεμελεῖτο δὲ καὶ σωμασκίας καὶ ἦν εὐέκτης. Ἐστρατεύσατο γοῦν εἰς Ἀμφίπολιν* καὶ Ξενοφῶντα ἀφ' ἵππου πεσόντα ἐν τῇ κατὰ Δήλιον μάχῃ διέσωσεν ὑπολαβών· ὅτε καί, πάντων φευγόντων Ἀθηναίων, αὐτὸς ἠρέμα ἀνεχώρει, παρεπιστρεφόμενος ἡσυχῇ καὶ τηρῶν ἀμύνασθαι εἴ τίς οἱ ἐπέλθοι.

Now, if this story is true, it is assumed that Xenophon must have been at least in his twentieth year; as youths between the ages of eighteen and twenty were formed into a kind of horse-patrol, under the name of περίπολοι, to guard the

* Diogenes refers here in all probability to the expedition of B. C. 432–430 against Potidaea, in the winter blockade of which place Socrates served with conspicuous hardihood. (PLAT. Symp. p. 220 A.) He is said to have been also on the expedition which Cleon led in B. C. 422 to attempt the recovery of Amphipolis; but, though he no doubt did his duty there as elsewhere, I can find no mention of any unusual gallantry or endurance displayed by him in that service. This may, therefore, be a further instance of the inaccuracy of Diogenes.

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frontier, but were not required to serve beyond it; and, though the so-called battle of Delium was actually fought within the limits of the Athenian territory in the vicinity of Oropus, it is taken for granted that because Delium, the objective point of the expedition, was over the boundary, Xenophon could not have been permitted to take part in it unless he had passed beyond the age of the περίπολοι. But, when you read the narrative of Thucydides, and remember that Delium was only about a mile from the border territory of Oropus, and Oropus itself only a day's march from Athens, you feel that Grote has good ground for saying, as he does, that "it is probable that men of all ages, arms, and dispositions crowded to join the march, in part from mere curiosity and excitement." Assuming, therefore, for the moment the truth of the story in Diogenes, Xenophon may well have been from five to ten years younger than it is asserted that he was at the time of the battle of Delium; and this reasoning of mine should find favor with those who wish to accept the literal truth of Strabo's statement that Socrates took him on his shoulders, and carried him safely for several stades.

But this conjecture is in my judgment by no means sufficient to harmonize the story with the passages I shall presently quote from the Anabasis; and I am forced, therefore, to discredit it altogether. No doubt both Strabo and Diogenes found the fact asserted in the authorities they consulted. But you must remember that Strabo was a contemporary of Augustus, and lived certainly some years into the reign of Tiberius; while Diogenes probably flourished at the close of the second century after Christ, and is by some placed as low as the time of Constantine. Strabo was no doubt accurate and painstaking in the verification of his statements as to matters of geography; but such stories as the one in question were probably introduced into his account by way of enlivening it and without any special examination into their truth or falsehood. It was enough for him that such a story was current in reference to the locality to warrant him in inserting it. Diogenes, however, was eminently uncritical. The writer of his life in Smith's Dictionary (Adolf Stahr) says of him:

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"His work is in reality nothing but a compilation of the most heterogeneous and often directly contradictory accounts, put together without plan, criticism, or connection." "His object evidently was to furnish a book which was to amuse its readers by piquant anecdotes." "The traces of carelessness and mistakes are very numerous; much in the work is confused, and there is also much which is quite absurd." "In order to rescue the common sense of the writer, critics have had recourse to the hypothesis that the present work is a mutilated abridgment of the original production of Diogenes." I maintain, therefore, that an anecdote which we find introduced incidentally into the work of a geographer who lived four hundred years after the time of the alleged occurrence, and into the work of an uncritical biographer of philosophers who lived at least six hundred years after it, is not to be accepted as true, if there is any considerable weight of probability against it, and much less so if the acceptance of it renders several statements in the writings of the subject of the anecdote preposterous and absurd.

First, then, as to the antecedent improbability of Xenophon's having been present, under the circumstances supposed, at the battle of Delium.

1. The story is not perhaps irreconcilable, but it is certainly not in obvious accord, with the fact stated in Plutarch's life of Alcibiades, that "in the battle of Delium, when the Athenians were routed, and Socrates with a few others were retreating on foot, Alcibiades, who was on horseback, observing it, would not pass on, but stayed to shelter him from the danger, and brought him safe off, though the enemy pressed hard upon them and cut many off." The natural inference from this would be that Socrates had quite enough to do to save himself, and was not in a condition to take on his shoulders a young man of twenty, and walk off with him for several stades.*

* It is notable that Krüger is inclined to question the accuracy of this narrative of Plutarch, on the ground that Alcibiades, in *Plato's* "Banquet" (pp. 220, 221), when he is represented as pronouncing his panegyric on Socrates, does not claim to have contributed anything to his safety. But Krüger has not a word to say about the singular fact that Xenophon, in *his own* Memorabilia, makes no allusion

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2. On the assumption that Xenophon was of military age at the time of the battle of Delium, where was he and what was he doing during the remaining twenty years of the war? It is hard to believe that a man of such remarkable resource and practical efficiency should have remained unemployed during all the exciting scenes of the Sicilian expedition and on the coast of Asia Minor; and it is nearly as incredible that, if he had been engaged in those affairs, he would have told us nothing about them himself (for reticence about his own achievements is certainly not to be attributed to him), or that we should have had no notices of his adventures from other sources.

3. It is highly improbable that, if he had been indebted for the saving of his life to Socrates, we should have had no intimation of so striking a fact in any of his numerous writings, particularly when one of them is expressly devoted to the vindication of the character of Socrates as in all respects a good citizen.

4. Lucian (in his Μακρόβιοι, §21) states that Xenophon lived beyond his ninetieth year. This may very well be the case. But it is hard to believe that he could have maintained to the verge of that age so much literary activity as he was exhibiting at or after the date of the battle of Mantinea, B. C. 362. The narrative of the Hellenica is continued to that date, when he must have been, according to the common view, eighty-two years old. But this is not all; for in Hell. vi. 4. 35, the assassination of Alexander of Pherae is mentioned, which Clinton and Grote place in B. C. 359, when Xenophon would have been eighty-five years old, and Diodorus places three years later; and at the end of the chapter an expression is used which would suggest that a considerable interval elapsed between the murder and the writing of the narrative: *τῶν δὲ ταῦτα πραξάντων ἄχρις οὗ ὅδε ὁ λόγος ἐγράφετο Τισίφονος πρεσβύτατος ὢν τῶν ἀδελφῶν τὴν ἀρχὴν εἶχε.* Moreover, the last chapter of the Cyropaedia, called the Epilogus, which,

to his own supposed debt to Socrates. Krüger does not observe, moreover, that in the "Banquet," though Alcibiades describes Socrates's dauntless bearing in the face of the foe, he does not mention his having Xenophon on his back, which would have surely enhanced greatly the noteworthiness of the scene.

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though its genuineness has been questioned, is now, I believe, generally recognized as a fitting conclusion to the book, speaks of events connected with the revolt of certain satraps from Artaxerxes Mnemon, which occurred B. C. 361; and Xenophon undoubtedly wrote his Hipparchicus and his Poroi after the repeal of the decree for his banishment, which Krüger places in the same year as the battle of Mantinea, B. C. 362. He must, therefore, have been engaged on at least four of his works after he was, as is generally assumed, eighty-two years old; I say 'at least,' for the passage at the beginning of the third book of the Hellenica, in which Xenophon speaks of an account of the expedition and retreat of the Greeks having been written by a certain Themistogenes of Syracuse, induces Schneider to conclude decisively that the Anabasis was written after the Hellenica. This, however, is very doubtful on other grounds.

5. Photius states that Xenophon was a pupil of Isocrates, who was born B. C. 436. This may be true, as George Long (in Smith's Dict.) says; but, if it is true, it is at least exceedingly improbable that Xenophon should have been born eight years before his future teacher.

I now pass to the passages in the Anabasis which bear upon the question, and which seem to me to prove that if Xenophon was at the battle of Delium at all, he must have been so in the same sense as that in which in the Scripture Levi is said to have paid tithes to Melchisedec.*

1. In the last chapter of Book ii. we are told that of the five generals who were assassinated, Proxenus was about thirty years old (*ἐτῶν ὡς τριάκοντα*), Clearchus about fifty (*ἀμφὶ τὰ πεντήκοντα ἔτη*), while Agias and Socrates were about thirty-five (*ἦστην ἄμφω ἀμφὶ τὰ πέντε καὶ τριάκοντα ἔτη ἀπὸ γενεᾶς*). Menon's age is not mentioned; but it may be inferred from what is stated that he was considerably younger than any of the others. Now Xenophon joined the expedition through the influence of Proxenus, who was, according to the view I am criticizing, his junior by thirteen years. It is antecedently improbable that influence such as this would have been exerted

* Heb. vii. 9, 10.

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by a young man upon one so much his senior. But omitting this point, with which circumstances may have had something to do, it is at least certain that Xenophon must have been perfectly familiar with the phenomenon of men of thirty or thirty-five years of age discharging the functions of generals, and he could not, therefore, if he were older than this, have appeared to himself too young to exercise such functions. It is of course true that, in case of an election of their commander by the soldiers, a man of mature years and an experienced veteran would, other things being equal, be preferred to a mere youth of no recognized preëminence. But, in the absence of any *lex annalis* to control them, soldiers in such a strait as the Greeks were in would be likely to yield submission to the man, whatever were his age, who seemed to possess in the highest degree the qualities needed for their deliverance; and certainly if they were, as was the case with Proxenus's officers, accustomed to obey a man of thirty, they would not be likely to look upon a man of forty-three as too young for the position. But what does Xenophon say (iii. 1. 14) when he tells us his meditations after awaking from his dream? "No one," he says, "is taking any thought about our dangers. Why do I wait for the general of some other city to undertake these things? and what age do I expect to come to myself? for I shall not be any older if I give myself up to the enemy to-day"; or, as Grote puts it, "Why do I wait for any man older than myself or for any man of a different city to begin (*ποίαν δ' ἡλικίαν ἐμαυτῷ ἐλθεῖν ἀναμένω; οὐ γὰρ ἔγωγ' ἔτι πρεσβύτερος ἔσομαι, ἐὰν τήμερον προδῶ ἐμαυτὸν τοῖς πολεμίοις*)? Here the word *ἡλικίαν*, which by itself implies simply 'time of life,' is confined to the notion of 'youth' by the subsequent *πρεσβύτερος*.

2. When Xenophon has roused the captains of Proxenus, and has expressed to them his anxiety and his views as to the proper course to be pursued, he says (iii. 1. 24; I use again Grote's adaptation): "Let us not wait for any one else to come as monitor to us; let us take the lead, and communicate the stimulus of honor to others. Do you show yourselves now the best of the lochages, more worthy of being generals

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than the generals themselves. Begin at once, and I desire only to follow you. But if you order me into the front rank, I shall obey without pleading my youth as an excuse, accounting myself of complete maturity, when the purpose is to save myself from ruin" (iii. 1. 25, *κἀγὼ δέ, εἰ μὲν ὑμεῖς ἐθέλετε ἐξορμᾶν ἐπὶ ταῦτα, ἕπεσθαι ὑμῖν βούλομαι· εἰ δ' ὑμεῖς τάττετέ με ἡγεῖσθαι, οὐδὲν προφασίζομαι τὴν ἡλικίαν, ἀλλὰ καὶ ἀκμάζειν ἡγοῦμαι ἐρύκειν ἀπ' ἐμαυτοῦ τὰ κακά*). How absurd would it have appeared to Proxenus's captains, accustomed as they were to obey the commands of a man of thirty, to hear a man of forty-three suggesting that perhaps he might appear to them too young to act as their leader!

3. After suggesting the best formation for the army on its march, Xenophon proposes that the officers who are to command on each quarter shall be at once selected, and says: "Let Cheirisophus lead the van, since he is a Lacedaemonian; and let two of the oldest generals have charge of the two wings; and let me and Timasion, who are the younger, guard the rear" (iii. 2. 37, *ὀπισθοφυλακῶμεν δὲ ἡμεῖς οἱ νεώτεροι, ἐγώ τε καὶ Τιμασίων, τὸ νῦν εἶναι*). We are not told the ages of the generals who were chosen to fill the places of those who had been murdered; but it is exceedingly improbable that they were all over forty;* and yet they must have been considerably so, if Xenophon, being forty-three, could speak of himself as younger than they.

4. When it is necessary to make a supreme effort to gain a certain height, in order to dislodge the enemy from their threatening position, Xenophon, discussing the matter with Cheirisophus, says that he will either take command of the force which is to scale the height or stay with the army in the plain, and Cheirisophus, not to be outdone in generosity, replies: "Well, I allow you to choose which you please"; and then we are told that "Xenophon, saying that he is the younger, elects to go" (iii. 4. 42, *εἰπὼν ὁ Ξενοφῶν ὅτι νεώτερός ἐστιν, αἱρεῖται πορεύεσθαι*). Here again there is the same assertion

*It is proper to say that Krüger assumes the truth of this improbability, and, if I understand him, believes it likely that the rank and file of the army also consisted of men over forty. I do not think that many who consider the circumstances under which the Cyreian force was collected will agree with him.

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of comparative youthfulness, which would have seemed impertinent and ridiculous in a man of middle age.

5. When the Greeks had reached Trapezus, and, after vainly waiting for a number of vessels sufficient to transport the whole army, decided that they must make a move, they placed on board the ships which they had secured the feeble and *those above forty years* with the children and women, and they placed Philesius and Sophaenetus, the eldest of the generals, in charge of them (v. 3. 1, *καὶ εἰς μὲν τὰ πλοῖα τούς τε ἀσθενοῦντας ἐνεβίβασαν καὶ τοὺς ὑπὲρ τετταράκοντα ἔτη καὶ παῖδας καὶ γυναῖκας — καὶ Φιλήσιον καὶ Σοφαίνετον, τοὺς πρεσβυτάτους τῶν στρατηγῶν, εἰσβιβάσαντες τούτων ἐκέλευον ἐπιμελεῖσθαι*). Here it is to be observed that it is manifest that only a small number of men in the army were as old as forty years; for they had only a small number of vessels, and the subsequent fighting strength of the enemy was not seriously lessened; and that two of the other generals are distinctly spoken of as older than their brother officers.

6. On a certain occasion, Neon, who was in command of the division of Cheirisophus, when the army was in great straits for provisions, led out two thousand volunteers for an attack on some Bithynian villages, though the sacrifices persisted in presenting unfavorable indications. Subsequently his force was surprised by the horsemen of Pharnabazus, and five hundred of them were cut off, and the rest took refuge on a mountain. On hearing this, Xenophon, first sacrificing one of the baggage oxen, hurried to their aid, and with him all the others up to thirty years (vi. 4. 25, *ἐβοήθει καὶ οἱ ἄλλοι οἱ μέχρι τριάκοντα ἐτῶν ἅπαντες*). One would naturally infer from this that Xenophon did not appear conspicuously unequal to his comrades, as he would have done if he had been nearly forty-five years old. For in the following chapter (vi. 5. 4) we are told that after this reverse the generals organized an expedition for forage, leaving the slaves and mixed multitude (*τὸν ὄχλον καὶ τὰ ἀνδράποδα*) in a strongly fortified camp with Neon to guard it (*οἱ μὲν δὴ ἄλλοι πάντες ἐξῆεσαν, Νέων δὲ οὔ· ἐδόκει γὰρ κάλλιστον εἶναι τοῦτον φύλακα καταλιπεῖν τῶν ἐπὶ τὸ στρατόπεδον*).

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And then it is said* that when Neon's captains and soldiers, feeling ashamed to stay behind when the rest had gone forth, left those who were in the camp with Neon, then all went forth on the expedition, and only those were left behind who were more than forty-five years old (*κατέλιπον αὐτοῦ τοὺς ὑπὲρ πέντε καὶ τετταράκοντα ἔτη*), from which we may gather that an age such as is commonly attributed to Xenophon was generally regarded as affording some justification for a certain remissness and willingness to be behind a rampart.

7. After the Greeks had taken service with Seuthes, when it was necessary to make a very rapid attack, Xenophon dismounted from his horse, and on being asked why he did so, replied that the hoplites would run faster and more cheerfully if he led them on foot; and then it is said that Xenophon ordered the men who were not over thirty to join him from the companies, and that he himself ran fast with these, while Cleanor (who is mentioned in ii. 1. 10 as *πρεσβύτατος ὤν*) led the rest of the Greeks (vii. 3. 46, *Ξενοφῶν δὲ παρηγγύησε τοὺς εἰς τριάκοντα ἔτη παριέναι ἀπὸ τῶν λόχων εὐζώνους. καὶ αὐτὸς μὲν ἐτρόχαζε τούτους ἔχων· Κλεάνωρ δ' ἡγεῖτο τῶν ἄλλων Ἑλλήνων*). Here again the natural inference is that Xenophon was certainly not inferior in bodily activity to those who were under thirty, and that therefore he was himself probably under thirty.

There are several other passages which I might quote, in which, though he says nothing by which his own age is directly implied, he calls attention to the fact that others are of more or less advanced ages (*πρεσβύτεροι* or *πρέσβύτατοι*). Now I think that this is of itself an indication of youthfulness on the part of the person who so speaks or writes. For as it cannot be supposed that there were any in the army who were what we should call really old men, it would be an impertinence for a person who was himself forty-three years old to talk about his comrades so readily as Xenophon does as being "older" or "oldest."

There is only one passage in the Anabasis which is supposed

*This passage is a little obscure. I give substantially the interpretation of Kühner and Freund.

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to imply that Xenophon was a man of mature years. It is when Seuthes, among other fair promises by which he hoped to induce Xenophon to engage the Greek army to take service with him, says: "And to you, Xenophon, I will give a daughter of mine; and if you have a daughter, I will buy her after the Thracian manner" (vii. 2. 38, *σοὶ δὲ, ὦ Ξενοφῶν, καὶ θυγατέρα δώσω, καί, εἴ τις σοὶ ἔστι θυγάτηρ, ὠνήσομαι Θρᾳκίῳ νόμῳ*). This, it is said, implies that Xenophon must have seemed to Seuthes old enough to have a marriageable daughter. But no such inference is necessary. For anything we know to the contrary, Xenophon, though as young as I think he was, may have been bronzed by the hardship and exposure he had encountered during the previous months so as to look as old as Krüger makes him; or Seuthes may have thought that perhaps he had an infant daughter whom he might purchase, in eastern fashion, for his harem; or, more probable than either of these suppositions, it may have been an offer made as recklessly and with as little thought or care for the possibility of its fulfillment as any other of the engagements which Seuthes entered into at the same time. There is, moreover, a passage subsequently (vii. 6. 34) in which Xenophon implies distinctly that he had no children at that time.

My own strong impression is that Xenophon was under twenty-five at the time of the Anabasis, though, of course, I do not pretend to have established anything so precise as this; and that, therefore, whether it was Xenophon or a certain Theopompus at whom the repartee of Phalinus was aimed, we may still allow the account of scorn and wonder to stand as Bacon puts it. If we believe that Xenophon was a mere youth, the remarks which Grote makes on the superiority of Athenian training as compared with that of other parts of Greece will be felt to be more strikingly appropriate; and I quote a few lines of them in order to call due attention to the personal qualities which Xenophon possessed, and which secured the admission of his superiority notwithstanding his apparent youthfulness. Grote says, in his account of the ready way in which Xenophon's suggestions were adopted: "Cheirisophus had not only been before in office as one of

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the generals, but he was also a native of Sparta, whose supremacy and name were at that moment all-powerful. Kleanor had been before, not indeed a general, but a lochage, or one in the second rank of officers. He was an elderly man, and he was an Arcadian, while more than the numerical half of the army consisted of Arcadians and Achaeans. Either of these two, therefore, and various others besides, enjoyed a sort of prerogative or established starting-point for taking the initiative in reference to the dispirited army. But Xenophon was comparatively a young man" — I should say, a very young man — "with little military experience. He was not an officer at all. He had nothing to start with except his personal qualities and previous training." "In him are exemplified those peculiarities of Athens — spontaneous and forward impulse as well in conception as in execution, confidence under circumstances which made others despair, persuasive discourse and publicity of discussion made subservient to practical business, so as at once to appeal to the intelligence, and stimulate the active zeal, of the multitude." "The Athenian Xenophon was among the few who could think, speak, and act with equal efficiency." "It was this tripartite accomplishment, the exclusive possession of which, in spite of constant jealousy on the part of the Boeotian officers and comrades of Proxenus, elevated Xenophon into the most ascendent position in the Cyreian army."

VIII. — *Φύσει or Θέσει — Natural or Conventional?*

BY WILLIAM D. WHITNEY,

PROFESSOR OF SANSKRIT AND COMPARATIVE PHILOLOGY IN YALE COLLEGE.

THE Greeks, it is well known, disputed of old with one another whether the names of things existed *φύσει*, 'by nature,' or *θέσει*, 'by attribution' — that is, as we should say, 'by convention.' Into the history of this dispute, into the question as to what philosophers took ground on the one side and on the other, with what arguments they supported their views, and how near they came to a final agreement, there

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is no need that we enter. Their basis of argument was so much more restricted than ours that their discussions would have for us only a historical interest; and the inquiry itself is still a living one. Notwithstanding all the progress that linguistic science has made in this century, general opinion — nay, even the opinion of linguistic scholars, of writers upon language — is still so far at variance that both answers are given. This may be, at least in part, not so much from a real essential difference of view, as from a different understanding of the meaning of the terms used. But, whichever it be, the discordance is not to the credit of the new science of language: if that science has not been able yet to settle so fundamental a question, between views as different as white and black, it cannot claim to have accomplished much; it is still in its infancy.

It may be sufficient to quote, as the starting-point of our own inquiry, the expressed opinion of one well-known and highly meritorious author, Archbishop Trench, of Dublin. In his "Study of Words" (p. 173, note), he remarks, after noting the fact of the dispute, whether words were *θέσει* or *φύσει*, "it is needless to say that the last is the truth"; and one seems to see on his face the smile of conscious superiority to those poor Greeks, who labored so long over a matter which could be settled in half a sentence, by a mere unargumentative "it is needless to say," without statement of reasons or explanation of meaning. And the Archbishop is supported, solidly and heartily, by that immense majority of the human race who know each his own language alone, and who are persuaded that only those that speak it really speak at all. Every linguistic scholar is aware how wide-spread and deep-rooted this feeling has been and still is; how it has been the foundation of many a race-name, assumed by the race to itself as self-asserted 'speakers,' all outsiders being "barbarians" or 'babblers.' And it would be very easy to find even in our enlightened communities men who, though they may know that other people have other names for things than their own, yet believe, outspokenly or in their secret hearts, that those are mere nicknames, only their own being the real thing.

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Doubtless we should do wrong to assume that Trench and his fellows hold names in this sense to exist φύσει: that is to say, that for every conception there exists a single "natural" name, all the others being "unnatural," or "artificial," or whatever else they may choose to set up as opposed to "natural."

For, as every well-informed person is aware nowadays, there are for our current conceptions as many different names, names somewhat unlike or totally diverse, as there are languages in the world — let us say, a thousand; and, apparently, each one of the thousand has as good a right to claim that it exists φύσει as any of the other nine hundred ninety and nine. Can any good reason be discovered why the term applies to one more than to another? or why it belongs alike to all?

Each of the thousand plainly has its own supporting community, its constituency. Perhaps, then, each corresponds to the peculiar nature of its community, comes φύσει to every individual member thereof. There are, in plenty, differences of race-endowment, differences of common circumstance and education, of community atmosphere; with some of these the differences of expression may be correlated. May be so, certainly; but are they so? As regards race, it is indeed true to a very considerable extent that men of the same race employ more or less kindred expressions for a good part of their common conceptions. But then, there are ways enough of accounting for this without involving the answer φύσει; and there are also exceptions enough to make us cast out this answer as impossible. Take, for example, the full-blooded Celt of Ireland who uses only English names for things, the one of Wales who uses only Celtic, the one of France (there must probably be such, if there were only a test by which we could discover him,) who uses only Romanic. Take the Jew of pure lineage, talking just as the community talks with whom his lot happens to be cast. Note what names the African uses, in the various lands of his former or present servitude, while bearing in his aspect the most convincing marks of undiluted descent. Or come into an

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American community, and pick out, by a little careful examination or genealogic inquiry, the representatives of a dozen diverse nationalities, and find them all calling the same things by the same names, knowing no other. This does not look very much as if names came by any kind of φύσις that is characteristic of a race. As for one that should be characteristic of a grade of ability, a cast of personal disposition and character, a tone of education and enlightenment, that is still more out of the question; every one knows that in any single community of accordant speakers such discordances, in all possible kind and degree, are abundantly found.

But if, weary of this superficial and empirical inquiry, we look more deeply to see how such a state of things comes about, we shall find a not less total absence of φύσις. We shall see that every normally constituted human being that comes into the world has a linguistic faculty amounting simply to this: that he is able to learn to speak, by acquiring those particular signs for ideas, and those methods of their use, which are established and current in the community into whose midst he is born. The whole consideration of the process by which the individual gets his "native language" teaches us this; and there is no other way of accounting for the fact that each person grows up to speak the tongue of his own community, and of his own special class of the community, without any regard to the race from which he comes, or to the capacity and disposition with which he is endowed, or to the grade of culture which he attains. If there be — we will leave that possibility open for the present, to take it up again later — a mode of expression that is natural to the individual as such, that forms a part of his φύσις, it is at any rate overborne and stifled by that other unnatural mode which his teachers impose upon him. It is difficult to see how, without laying himself open to the charge of an absurd disregard of patent facts, any one can put forth a different doctrine; can maintain, for example, that the child creates his speech by independent action, but creates it in necessary accordance with the speech of those about him. As well maintain that he creates certain melodies, devises certain trades, develops

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certain branches of knowledge, dances certain combinations of steps, without learning them, but by a spontaneous mental action, which some mysterious, undefined and indefinable, force brings into wonderful accordance with the like action of his fellows.

It may be asserted, I believe, without any chance of successful contradiction, that not a single item of the traditional English speech received by us from our forefathers has a vestige of right to claim to exist *φύσει* in any one of the innumerable individuals that employ it, to have been produced by him under government of an internal, instinctive impulse, that made it what it is and no other. The tie existing between the conception and the sign is one of mental association only, a mental association as artificial as connects, for example, the sign 5 with the number it stands for, or π with 3.14159+.

That a system of signs won after the openest and most conscious fashion in this way is capable of answering to us the purposes of a language may be clearly shown in the acquisition of a foreign tongue. One may take a grammar and a dictionary, and commence, by the tedious method of translating into his own set of familiar signs that set which the French or the German child learns by a directer process, and may keep so long at it that a French or German page is as readily and surely intelligible to him as an English one; moreover, by going among the people who use that other set, and practicing himself in the use of them, he may "get them loose," as the Germans say, may mobilize them, associate them in such fashion with his conceptions that they will come into his mind, at first not less readily than his old English signs, and then even more so; and when this last takes place, he has deposed his first acquisition in favor of a second. If the process of substitution be not begun too late, after the habits of thought and habits of utterance have become too far fixed to be altered, it may go on even to the oblivion of one's "native speech," and to the winning of a command of the "foreign tongue" not inferior to that of any person to whom the latter is "native." In fact, *native tongue* means simply 'tongue first acquired": acquired under peculiar

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circumstances, and therefore in its own peculiar way; and having upon the mental powers, in respect to training and development, an effect which no second acquisition can have, in anything like the same degree.

There are, it is true, differences between the conceptions attached in different languages to words that seem synonymous. But these have nothing to do with determining the peculiar form of the varying signs. So there are marked differences between the conceptions of individual speakers of the same language. Every child begins with using a host of signs of which he is far enough from apprehending the meaning in fullness and with accuracy; and this imperfection of apprehension cleaves to him, in greater or less degree in different parts of his vocabulary, to the end. However much an idea may expand and grow clearer in his mind, or in that of the whole community, there is no corresponding change of the sign.

But there are not a few pictorial, imitative, onomatopoetic signs in our speech: is not the case otherwise with them? do not they, at least, have in them something of a φύσει character? Yes, in a certain sense; but not at all as the term φύσει is meant in the controversy which we are judging. So, among the mathematical signs we use, a round mark, reminding one of a hole, may be said to be more suggestive of vacancy or nothingness, and a single straight mark of unity, than the other figures are suggestive, each of its own meaning; they have in them an element of what we may call onomatopoetic force. But there is no necessity about this; nothing that makes the signs in question, to the exclusion of others, the "natural" representatives of their meaning. If there were, no other sign for 'naught' would be acceptable; and we should have to signify 'two' by two strokes, and 'three' by three strokes — as, in fact, the Romans and Chinese have done — and so on. Just so, when it is pointed out, we see that there is a kind of adaptedness in two parallel lines (=) to signify equality, especially when compared with > and <, as used to signify superiority and inferiority; yet, in the great majority of cases, the signs used (like + and —) are purely conventional, and answer their purpose precisely as well; and

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these particular purposes would be answered just as well by other signs, if once established in use for them. There is no such thing as a "natural" symbol for nonentity, or unity, or plurality; it is only that, in casting about for signs for this whole class of conceptions, we find certain ones for certain uses more readily suggested than others, which would have served equally well: the effective use is not dependent on any such considerations. That a certain bird is called a *cuckoo*, by a rude imitation of its note (for the bird really utters neither proper *k* sound nor *oo* sound, and its distinct interval of musical tone is lost in our reproduction), is an obvious and generally intelligible onomatopœia; but if the word *cuckoo* were φύσει the name of the animal, then the other animals that make imitable sounds would have also to get their names from them. And there is certainly no φύσις in calling, for example, the related American species by the same name, since they do not utter the same note. So the *crack* and *crash*, the *hiss* and *whiz* and *buzz*, and all their kin, have a like pictorial character, of a like value: it is by no means essential to their usefulness as signs, but is rather ornamental, giving them an added attraction. Such words testify to a disposition which is an interesting and a highly important one in language-making, and has to be taken carefully into account especially by those who are discussing the problem of the origin of language — the disposition, namely, to form and use signs that have about them an immediate suggestiveness, inside those rather narrow limits, imposed by the nature of the thing signified and the instrumentality employed for signifying it, within which it is practicable so to do. These imitative signs are by no means all primitive; the disposition toward their use also leads to their production from time to time, or, in the history of manifold change in the form of words, acts as a shaping force. It is essentially the same with the disposition which expresses itself in such lines as those celebrated ones of Pope: —

> When Ajax strives some rock's vast weight to throw,
> The line too labors, and the words move slow.
> Not so when swift Camilla scours the plain,
> Flies o'er the unbending corn and skims along the main. etc.

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Its office is not unlike that belonging to tone and gesture in our ordinary speech — impressive, decorative, artistic, but not indispensable in order to mutual intelligence, which is the great object of speech, and is fully attained by the use of signs respecting which we only know that others have formed with them the same associations as ourselves, and will, when we use them, think what we are thinking and desiring them to think. There is not one of these onomatopoetically signified conceptions which is not in other languages, or even also in our own, intimated by signs possessing no trace of an imitative character.

In full view, therefore, of the not wholly insignificant list of onomatopœic words existing in English, we may still maintain that the English names of things do not exist φύσει, that they are the results of a θέσις, of a θέσις which each one of us is led to make under government of the example or the direct instruction of others.

There is, however, another department of expression in which we might plausibly look for the clearest signs of a φύσις: namely, among the interjections, which should be, not the medium of signification of conceptions and judgments, but direct intimations of will and outbursts of emotion; and which thus lie upon the border between human speech and animal expression. Yet even here the effects of educated habit show themselves in the most perplexing manner. Speech is so essentionally conventional that its character infects even our exclamations: which, after all, are not so much means of relieving feeling as of signifying to others that we have such and such feeling. The Englishman, accordingly, does not say *ach* and *weh* and *so*, like the German, nor *fi* and *bah*, like the Frenchman. So far as consonants and vowels are concerned, we have no available evidence that the untrained, the purely natural, human animal would give vent to any definite system of utterances in order to express any definable variety of emotions. As regards, indeed, the tone of utterance, the case is very different. The capacity of tone to serve as the immediate expression of feeling, intelligible to all human beings without explanation and without training, is beyond

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dispute. This is even added as a powerful auxiliary, along with the other natural means of expression, to our conventional speech. Language without it loses half its power to move and sway, to incite and persuade. Here we seem to touch the true sphere of instinctive expressiveness. And this kind of utterance shades off into those universal acts of expression which belong to man purely as an animal, the laugh and the cry, the groan and the sob, involuntary movements of the muscles, which are analogous with the shiver, the rise of the hair and falling of the jaw, the smile, the watering or beaming of the eye, and all the other physical movements which make the countenance, the arms, the whole body, indicative of a felt emotion.

So far, then, as our present audible speech is concerned, we are able to find in it nothing but the added tone, the modulation of the voice, which can be said to have its existence and its value *φύσει*, by its own intrinsic nature. But the question still remains whether this must be regarded as the only possible sphere of natural expression. May there not be, after all, a connection between some part of the muscular apparatus and the intellectual action of the soul or inner self, whereby an idea, a conception, a judgment, has also its corresponding external and sensible action? If these meddling teachers, with their elaborated systems of conventional signs, would only keep out of the way, might not each human being, as fast as it formed ideas, produce a natural language for their expression?

In investigating this question, we are cut off from the aid of direct experiment. Every child does actually grow up in the company of trained and practiced speakers; it hears them speaking together; and, long before it can govern its own organs of utterance so as to reproduce the signs they make, it understands what many of these mean; it crows and prattles in imitation of them. To get at even a little community of two or three persons untaught to speak seems an impossibility; for humanity forbids us to bring up human beings in utter ignorance, like mere animals, merely to satisfy our curiosity; to deny them the fundamental human privilege

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of instruction in speech, in order that we may see how they would act. And accident neither has created nor is likely to create, the necessary conditions of the experiment. The nearest approach to it is made in the case of individuals who by exceptional causes are cut off from the ordinary education of their kind. This may be by isolation, or it may be by deafness. Cases of the former kind, of wild and solitary men, are exceedingly rare, and the accounts given of them are of doubtful authenticity or competency. But the deaf are abundantly found and easily observed; and the ordinary name of *deaf-mute*, by which we know them, shows what is their condition in reference to speech. One of this class ordinarily differs from a normal human being only by the disabling of a single nerve, that which is sensitive to the vibrations of the tympanum, and reports them to the brain as sound, or else in the more external organs that produce the vibration. The apparatus of mental action is perfect, the apparatus of articulate utterance is also perfect; nothing is amiss with the mechanism which connects the two and coördinates their movements. Here, then, is quite what the φύσει theorist wants; a human being cut off from the disturbing influences of linguistic education, but accessible to light of every other kind, so far as it is not dependent on that education. He is placed in the midst of human society, which the great apostle of the φύσει theory, Steinthal, declares* to be the only condition indispensable to the development of speech. If, now, the deaf person produces articulate utterances as distinct permanent signs of his conceptions, if deaf persons of the same race or community produce utterances accordant with one another, such as are those of the ordinarily educated individuals in a community, if deaf persons of different race or community produce utterances that vary by differences resembling those found to prevail among existing dialects and languages, then the φύσει theory has a basis of observed fact to rest on; if otherwise, it has none. And that the case is otherwise does not need to be pointed out. Even the man isolated by solitude gets by degrees, in the conflict between his higher than

* *Abriss der Sprachwissenschaft*, i. 83, 84.

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merely animal powers and the circumstances of his life, a certain amount of education by experience: he learns to know and classify the objects of his daily observation, to appreciate rudely the operations of the more obvious natural causes, to connect and separate and anticipate, in a manner which, if far short of what is easily within our reach, is at least beyond what any other animal can compass: he ought, then, if language is an instinctive human product, to have something of a language for his entertainment and his aid. It is certainly more important to him than to others, since he is debarred most of the means of improvement which are open to them. Yet, as we have seen, even Steinthal does not venture to claim that he will talk, but rather postulates society as the only medium in which the heaven-implanted germs of speech can develop themselves. I do not question that he is right as to the fact; but his admission appears to me a virtual abandonment of the *φύσει* theory.

As the anomalies of linguistic life thus seem to furnish no evidence of a power of immediate natural expression, we have next to examine the regular progress of the history of language, and see if this exhibits any traces of such a power. If there were a natural adaptedness of certain signs to certain ideas, we ought to be able to discover its influence among the variety of those which govern the development of speech. But, in the first place, it seems to make decidedly against the existence of the influence that there is such utter discordance among the names given by different communities to the same conception. Within the sphere of emotional expression, as pointed out above, the elements are of kindred character in all beings, and universally intelligible. The laugh, the scream of pain, the tone of anger or of grief, need no interpreter. But it is far otherwise with the signs of ideas. Languages, words, are absolutely unintelligible to him who has not learned to speak them. It is all in vain to appeal to the inner sense of meaning to help the explanation, for instance, of a Lycian or an Etruscan inscription; he who should attempt it would be simply laughed at. In the changes of form and changes of sense which constitute the main growth of speech,

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we equally fail to find any regulating princple of the kind here referred to. Let us take as an example our word φύσις itself. It contains as its central element the root φυ (*phü*, a *p* with an audible *h*, a puff or flatus, following it), altered, it is believed, from a yet earlier *bhû*, and having the sense of 'grow.' That there is in any human organization a state of things conditioning *bhû* or φυ as the natural expression of the conception of 'growing,' no one probably, will be bold enough to maintain. Far from this, we do not even know whether that sense was absolutely the earliest one belonging to the word, whether it was not obtained by a transfer, even a distant one, from some other sense. Were it not for Greek usage, the root would seem rather to signify simple existence (Skt. *bhû*, Lat. *fu-i*, our *be*); and all the acuteness of the φύσει theorists would have been incompetent to demonstrate the transfer. The ending σι which makes the derived word is altered from an earlier *ti*; the same element is found, still otherwise altered, in our *grow*TH. Here, again, if there had been any natural adaptedness in the syllable *ti* to express, in combination with a root, the particular modification which this actually expresses, it ought to have exerted a conservative influence, keeping the element unchanged in form, or allowing it to alter only in a certain way, in accordance with the change of the idea. But no such thing is true here; nor anywhere else in language. The word *bhûti* has become φύσι- without any reference to meaning; the transformations of its *bh* and *u* and *t* are due to phonetic influences which wrought equally through the whole language, regardless of the sense of a single element affected by them. Comparative philologists have not seldom claimed that the onomatopoetic character of a word has protected it from phonetic change; but no one has ever detected a similar protective influence as exercised by the sense of the word. Nor can we discover any conservation in the opposite direction — any, namely, that has prevented a transfer of meaning, as being inconsistent with the unchanged audible form. Of the absence of such an influence we may find evidence enough in the history of this same word φύσις and its relatives. Φύσις, we have seen,

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means most literally the 'action of growing'; and how far this lies from its other uses, so much more wide and indefinite as they are, needs not to be pointed out. The addition of a simple adjective ending makes the derivitive φυσικός; and while *physics* and *physical* and *physicist* show only a development of meaning akin with that which has taken place in φύσις itself, *physic* and *physician* and *metaphysics* exhibit curious movements in quite other directions. We have noted above the change, in Sanskrit and Latin and Germanic, of the signification of the root from 'grow' to 'be.' And *bhûti*, the close analogue of φύσις in Sanskrit, has taken the prevailing sense of 'prosperity,' instead of 'nature.' *Nature* itself, our equivalent for φύσις, is a word of Latin origin. It likewise has a root at its centre; and the oldest form of this is *ga* or *gan*, 'be born.' Relics of the *g* which was once the main stay and support of the meaning are to be seen in *cognate*, *agnate*, and their like. All, then, that is left in *nature* of the significant syllable which lay at the foundation of its history is the initial *n*, which many etymologists, not without a certain reason, look upon as a secondary addition, forming *gan* from a more original *ga;* the rest is a mere accumulation of formative elements, suffixes. And though there may be a degree of analogy between the conceptions 'be born' and 'grow,' it is by no means such as should by any necessity lead to the development out of both of a name for 'nature.' The Latin derivatives which have most analogy in point of formation with φύσις are *natio* from the altered root, and *gens* (*genti*) from its more primitive form; and how unlike they are in meaning to φύσις, and even to one another, is plain enough; while from *gens* we get in our language, secondarily, such curious varieties as *gentle*, *genteel*, and *gentile*, in defiance of all laws of the connection of sound and sense.

And so, if we were to extend our search, we should find it to be, through the whole domain of language: the utmost conceivable variety of expression of the same idea in different tongues; a great diversity of derivation of the expressions for any given idea; a bewildering multifariousness of meaning in families of related words: nowhere in the known history of

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language-development any trace of a domination of sound by sense, or of sense by sound. Not by any means that there are not reasons, and in a host of cases discoverable reasons, why things are called as they are; but they are reasons founded, not in natural connection, but in previously formed associations, in already established conventions. When we nowadays want to signify a new conception, we have recourse to the (as above shown) purely conventionally used material lying within our reach, in our own tongue or elsewhere. We make a transfer of meaning, without other change, in a word already in use, as in *gravity;* or a derivative, as *galvanism;* or a compound, as *lightning-rod;* or we go deliberately to the anciently used stores of expression of some extinct tongue, and piece together a new vocable, as *thermometer;* or we variously combine two or more of these methods. There is always involved in the act some change of form, or of meaning, or of both; but the single underlying principle is that the new designation is obtained where, according to the existing habits of the language, it can most conveniently be found. No one ever sits down to let the idea strike in upon his soul and evoke an answering utterance: the very suggestion of such a thing is ludicrous; nor does the utterance ever slip out instinctively, without premeditation. It is all a process of the development and multiplication of usages. People having been in the habit of doing so and so, they are led, when occasion arises, to do this and that also: the new habit being connected with the old by some tie of association, it matters little what. To follow the history of this development is a task of the highest interest; in it are bound up the most valuable results of the science of language; by its aid we trace the evolution of knowledge, of thought, of institutions. But it does not bring us to—nor even, in my opinion, toward —a condition of things where we recognize the existence of any natural tie between the conception and its expression, between the idea and the word. On the contrary, we are led thereby to see the more clearly the essential congruence, in the midst of their more adventitious characteristics and their circumstances, of all the various processes of language-getting

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and language-making. He, in the first place, who acquires a "foreign language" finds, by the ear or by the eye, certain combinations of sounds, which he is able more or less accurately to reproduce, and which he learns to associate with their several ideas, and to use in combination with one another, familiarly and freely, and also "correctly": that is, according to the methods usual in a given community, methods which might just as well be otherwise, if the common consent only willed it so. Again, the child learning to speak does only the same thing: he too hears and imitates certain combinations of sounds, associates them with rudimentary conceptions which he is led to form, and puts them together, at first imperfectly and awkwardly, into the phrases which the usage of his community accepts. And, in the third place, through the whole traceable development of language, the language-makers have not been giving vent to natural and directly intelligible utterances; they have, rather, been increasing, by methods of whose nature and results they were themselves only dimly conscious, their store of conventional signs, elaborating new combinations of sounds which should henceforth be associated with certain ideas, and used as their representatives. It makes, properly speaking, no difference to the users whence their sign is obtained; only, as this is intended for the general use of a community, and as it must pass the ordeal of their acceptance before it can become a part of language, it is gained in such a way as involves the least practicable change of existing habits, the least possible shock to prevailing preferences—or prejudices, if we choose to call them so. We express this prosaic fact in imaginative form by saying that it must not be "opposed to the genius of the language." This does not, however, prevent the tie of association whereby the new sign is connected with the old from being often a very slender, a remote, even a fantastic or senseless one. Such cases, to be sure, are the exceptions, and to be explained by the special circumstances of each, if we can only command knowledge of them; but they have a high theoretic importance, as showing what the practical end of word-making is, and how it justifies even the most questionable

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means. On the whole, the body of expression grows and changes by an almost insensible process, step following step, each new sign attaching itself quite closely to an old one.

It is only by taking this view of the history of speech that we can explain its leading facts, and especially that capital fact, the oblivion of etymologies. In any given language, it is but a part of its words, often only a very small part, which even the skilled etymologist can carry back through even a few steps of their history, toward their ultimate roots. And as for the generality of speakers, they are ignorant and heedless of all etymological connections; to them, the word means the thing, and that is the end of it. For a time, and in a measure, the relation between primitive and derivative maintains itself; but it is by the mere power of inertia; if there were a positive conservative force involved, if its maintenance were essential or important, it would not be let go. As things are, it is of great consequence to the practical usefulness of language as an instrument of communication and of thought that the oblivion in question do take place, that our signs for ideas be not encumbered with etymological reminiscences. And the changes of form and of meaning, under the government solely of convenience, do go on unchecked, and independent of one another: there is no limit to the extent to which a word may change its form while retaining its old meaning, or its meaning while retaining its old form; or to which it may wander from its primitive condition, both inner and outer.

We do not find, then, in the traceable history of language, any more than in its present condition, evidence that the names of things exist φύσει. No such principle is called for in order to explain the facts; none such seems even admissible, as reconcilable with the facts. It now only remains to inquire whether there was or must have been something different at the outset, in the actually primitive period, that of the origin of language. Each existing conventional usage or habit founds itself upon a predecessor of the same character, as far back as we can go: was the absolutely lowest course of the foundation of another character? are we to recognize

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there a real internal correspondence of sound to sense? If there be any such thing in language, it is to be found only there.

But, as hardly needs to be pointed out, if this last be true, there is a strong presumption against its being found there, any more than elsewhere. What we can discover no traces of in all the later periods of speech, we may well despair of detecting in the earliest. To assume it out of hand, as the manner of some is, without even deigning to attempt its proof, but simply setting down as superficial or mechanical those who hold any other view, is certainly in the highest degree unreasonable. On the contrary, it may properly enough be claimed that if any sufficient and satisfactory way can be made out, of accounting for the origin of speech without bringing in as a factor any natural correspondence of sound to sense, but by appealing only to those forces which are seen in action in the later periods, and in their recognized and usual modes of action—then that account of origin will have the whole body of probabilities overwhelmingly in its favor.

And certainly, such an explanation lies close at hand, and is easy enough to find. We need only to recognize the impulse to communication as the force most immediately active in the production of speech, to acknowledge that man spoke primarily in order to make his feeling or thought known to his fellows, and all difficulty is removed. It will then follow that whatever would most readily conduce to mutual intelligence would be made the first foundation of expression: whether a reproduction of the natural tones and cries expressive of emotion, or an imitation of the sounds of nature, living or lifeless, or any other kind of imitation; whether, again, by tones addressed to the ear, or by gestures or grimaces addressed to the eye—for the theory would fully combine and turn to account all the known varieties of expression, leaving that one which experience should show the most available for its purposes to win the preference over the rest, and finally, perhaps, to well-nigh crowd them out of use. The beginnings thus made would certainly be of a rude character—even as sticks and stones for instruments, as

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fig-leaves and skins for garments, as caves and holes in the ground for dwellings, as scratches with sharp points and daubs of colored earth for pictorial art, as yells and groans for musical art: and so on. To adopt the theory of origin here proposed is equivalent to paralleling speech with these other human acquisitions and branches of culture, as being an instrumentality, gradually wrought out by the exercise of the peculiar powers with which man is endowed, and answering purposes which are human only; as brought into its present state of perfection, greatly different in different races, by slow accumulation, improvement, evolution, according to the various gifts and circumstances of each race. This view of language doubtless appears to some to be lacking in dignity; but if it is supported by all the facts and inferences of language-history, a sentimental prejudice can avail nothing against its reception.

And that it is so supported appears to me true beyond all reasonable question. If there is any other acceptable theory, I know not who has set it forth and given it a solid foundation. Those who reject it have wholly failed to realize that the burden of proof rests upon them, to show, or make probable, that there is, or ever was, a power of natural expression in men whereby certain combinations of articulate sounds are produced as the instinctive signs of certain articulate conceptions. I cannot see that they have produced any good evidence that there exists such a thing as the natural uttered sign of a conception. As has been pointed out above, the natural utterences of man do not signify conceptions; they intimate only feelings, emotions. If a human being feels a certain kind of lively pleasure, he laughs; if the contrary, he cries, or groans, or sighs, or something of the sort; if he is struck with astonishment or horror at the sight of anything, he may utter an exclamation; but it will only signify his feeling in view of it, not the thing itself. So much as this is instinctive, subjective; but it is not of the nature of human language; it is on the same plane with the ordinary utterances of the lower animals. There is no conversion of it into language until that motive is added which is the dominant and almost the

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only conscious one through the whole after-history of language: namely, the intent to communicate. This, by a change which is almost imperceptibly slight at first, while yet of deep and wide-reaching importance, lifts the whole action up to a higher plane. It inaugurates an instrumentality which, though cut loose from any internal connection with the operations of the mind, yet makes itself their ally and aid, and is, precisely on account of its extraneousness and its conventionality, capable of indefinite increase, development, refinement. It is like the production of instruments, in place of a sprouting out of new arms and legs, to answer to the higher needs of the more skilled workman. It comes to bear a wonderful part in the development of the individual mind, and in the cultural progress of the race.

There is nothing really derogatory to the creative power and self-centred action of the human soul in making it thus dependent for its development upon what seems a slight and extraneous motive: nothing, at any rate, more than in making man's development in all other respects dependent upon his position as a social being. It is confessed that the wholly solitary man would never be anything but an utterly wild savage; in the collision, the emulation, the mutual helpfulness, that come of sociality, are born all the arts of life. The greatness of man consists in what he was capable of becoming, not in what he actually was at the outset. In his low estate he was accessible to only the lower motives. He is, at the best, a short-sighted being, capable of taking but one step forward at a time, and never quite knowing where that will lead him; but also capable of maintaining the ground he has won, finding out what it is worth to him, and in due time taking another step. All his grand acquisitions have had their small beginnings and their slow growth, each generation adding to what it had received from its predecessor; and language just as much and just as plainly as the rest.

The doctrine of those who deliberately answer *φύσει* to our question I cannot help regarding as mainly a prejudice, and resting on a foundation of misapprehension. Because, in the history of development of human expression, the voice has

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come to be the greatly-prevailing, the well-nigh exclusive, instrument of expression, therefore they hastily conclude that there is a special natural relation between the mental apparatus of conception and judgment and the physical apparatus of sound-making—a relation which, as we have seen, is wholly imaginary. They talk learnedly about the reflex-motor action of the nerves, and assume that, when an impression comes over one, it causes him to utter or imagine a responsive sound, somewhat as a sense of the ludicrous calls forth a laugh, a sensation of fear, a crawling feeling, a dash of cold water, a shiver, and the like. They overlook certain essential differences between the two cases: in the first place, that these reflex-motor actions are the intimation of subjective conditions only, which conditions confessedly give rise also to utterances—but these utterances are not language, are not even its beginnings, but only its suggestion and preparation; and, in the second place, that the actions referred to are actually seen and demonstrated in living men, of every race, that they are substantially the same in all, that they may be controlled, but not altogether obliterated, much less interchanged and varied, under purely social influences, without regard to race; while the variety of expression of ideas is unlimited, and its choice dependent on nothing but education. To support the φύσει doctrine by quoting sporadic efforts at independent expression on the part of children growing up in the midst of speaking men is quite futile. Children are imitative beings, and sometimes a little wayward; they catch soon from their surroundings the trick of applying names to things, and, being aware of no particular reason for those they are taught, they try now and then a new one of their own making, enjoying the exercise of a degree of independent ingenuity. Nothing more than this is needed, I believe, to explain away all the scanty array of alleged facts which have ever been brought up in defense of the theory of natural expressiveness. To give that theory a real basis, it would be necessary to show that a child growing up alone, or among mutes, would also produce a body of articulate utterances, of definite meaning and application: or (what has been noted above as a much more accessible proof) that the deaf do the same thing.

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Eminent knowledge in psychology, in physiology, in phonetics, in any of the single departments which contribute their part, or their aid, to the science of language, does not by any means lead necessarily to correct views in linguistic philosophy. One may, for example, be the greatest living phonetist, and yet be still puzzling himself with the question what is, after all, the real tie of connection between sound and sense in language. One may be a profound metaphysician, and yet wholly mistake the same connection, taking with regard to the most essential points in the history of language an untenable, even absurd, position. It would not be difficult to cite individual examples of both these classes.

Our conclusion then is, that there is no proper sense in which the names of things can be said to exist *φύσει*; not only now, and through the ages of recorded speech, but even back to its very beginning, every name has been the result of a *θέσις*, an act of human attribution.

And yet, there is at least a certain sense in which the *θέσις* itself may be said to be performed *φύσει*; and it is in great part owing to a misapprehension of this sense that the answer *φύσει* has been so often given to the main question. It is undoubtedly, in a manner, "natural" to man to speak. We have to say "a certain sense," "in a manner," because the naturalness does not consist in man's individual nature alone, but also in his circumstances; with all his gifts just as they are, he would not speak unless placed in the company of his fellows. It is in just the same sense "natural" to man to live in houses, to wear clothes, to make instruments, to form societies, to establish customs and laws; yet hardly any one would think on that account of maintaining that, for example, coats and telescopes existed *φύσει*: while it is nevertheless quite as true of them as of nouns and verbs.

He who answers *φύσει*, therefore, to the question we have been discussing, lays himself open to the charge of total misapprehension of the most fundamental facts of language-history; he who answers *θέσει* needs only to show by due explanation that he does not mean to imply that any individual can successfully fasten any name he pleases upon any idea he

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may choose to select; since every change must win the assent of a community before it is language, and the community will ratify no arbitrary and unmotivated changes or fabrications. It is in this action of the community that another great part (besides that spoken of above) of the difficulty resides for those who hesitate to admit the doctrine of θέσις: they see so clearly that no man can do what he will with language that they are led to deny the action of individuals on language altogether. To do this is to mistake the nature of the conservative force which resists change: in reality, this force all resolves itself into the action of individuals, working under the same guidance and limitation, of motives and of circumstances, by which each of us is directed, and of which each one may, if he set himself rightly at work, become fully conscious.

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PROCEEDINGS.

SIXTH ANNUAL SESSION,

HELD AT HARTFORD, JULY, 1874.

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AMERICAN PHILOLOGICAL ASSOCIATION.

HARTFORD, CONN., July 14th, 1874.

The Sixth Annual Session was called to order at 3 o'clock P. M., in the hall of the Public High School, by the President, Professor Francis A. March, of Lafayette College, Easton, Penn.

Addresses of welcome were made by the Rev. Professor William Thompson, D.D., of Hartford, chairman of the Committee on Entertainment, and the Hon. Joseph H. Sprague, mayor of the city, chairman of the Local Committee, to which the President replied.

The Secretary presented his report, announcing that the persons whose names follow had been elected members of the Association:

Professor Stephen G. Barnes, Iowa College, Grinnell, Iowa; Mr. Thomas Davidson, St. Louis, Mo.; Mr. A. Eiswald, Savannah, Ga.; Professor John L. Johnson, University of Mississippi, Oxford, Miss.; Professor Joseph Milliken, Ohio Agricultural and Mechanical College, Columbus, Ohio; Professor E. C. Mitchell, Baptist Theological Seminary, Chicago, Ill.; Professor Philip Schaff, Union Theological Seminary, New York City; Mr. Edward F. Stewart, Easton, Penn.; President James C. Welling, Columbian University, Washington, D. C.; Professor John Williams White, Baldwin University, Berea, Ohio.

The Secretary also reported that M. Abel Hovelaque, of Paris, had presented to the Association copies of several of his philological publications.

On motion, Professor William F. Allen and Mr. Charles J. Buckingham were appointed auditors of the Treasurer's report.

On motion, it was

***Resolved*, That the Treasurer be requested to place fifty copies of the volume of Transactions recently published at the disposal of the President, for distribution to contributors to the funds of the Local Committee at Easton, Penn.**

Professor Charles H. Brigham, of Ann Arbor, Mich., exhibited an Ethiopic manuscript.

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This manuscript is apparently a collection of prayers, and probably prayers used at the altar service. It is on thin parchment, in three strips sewed together, in the whole six feet in length, and three and a half inches in breadth. The script is partly in black and partly in red ink, the red lines apparently marking the responses of the attendants in the service. Three-fourths of all the Ethiopic alphabetic characters are found in the script. The execution is very careful and nice. Each strip has at its head an "illumination" rudely done. The reading is from left to right. The age of the manuscript cannot be determined; but it is probably not very old. The manuscript was found by a workman in the yard of the railway station at Jackson Junction, Michigan, in the month of November, 1873.

Professor S. S. Haldeman, of the University of Pennsylvania, Philadelphia, read a paper on "An English Vowel-mutation, present in 'cag—keg.'"

The short vowel of "fat" is rather rare in the dialects of Europe, and, when present, it is probably due to a Celtic influence. It is well established in English, where, from its affinity with ĕ of "ebb," the two present more than two hundred examples of interchange, when archaic and local forms are enumerated. Among these are ambassador and embassy (where am- is deemed to be the more correct), annual and perennial, arrant and errant, assay and essay, bank and bench, brant and brent, canal and kennel, catsup and ketchup, charity and cherish, drag and dredge, frantic and frenetic, hackle and heckle, tarras and terrace, thrash and thresh, wrack and wreck, wrastle and wrestle.

Mr. W. W. Fowler, of Durham, Conn., read a paper on "Paradoxes in Language."

Words standing for white (color), light, and heat, in the Indo-Germanic languages, are from roots signifying to shine; on the other hand, many words standing for black (color), darkness, and cold, are from the same class of roots; for instance:

English *black*, *blank* (white), and *bleach*, from root *bha*, "to shine"; English *swarthy*, German *schwarz*, from root *svar*, "to shine."

Latin *furvus*, "dark, black," *baliolus*, "dark, swarthy," from root *bha*, "to shine"; Latin *candidus*, "white," from root *skand*, "to shine." *Ater*, "black," is probably from root *ath*, "to burn" (cf. Sanskrit *athara*, and Persian, *atar* "fire").

Greek *αἰθός*, "black," from root *idh*, *αιθ*, "to burn," "to glow"; *λευκός*, "white," from root *ruk*, *luk*, "to shine."

Sanskrit *krshṇa*, and Lithuanian *karsna*, "black," from root *kar*, "to glow," "to burn."

This paradox is explained by the use of the same or similar words to express the primary and the secondary effects of the sun and fire; the primary effects being light, brightness, whiteness; the secondary effects, a change in the color of substances—blackening (or darkening). Words meaning dark (color) or black, may be translated by the terms "sun-burned" or (simply) "burned"; a black color as well as a brown color is a burn-color. The English *swarthy* is "sunburned"; so originally was the German *schwarz*. The words *ink* (*encaustum*," burned in"),

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coal (from the root *gvar*, "to glow"), and *soot* (from the root *su, sva*, "to glow") illustrate the process by which many words standing for dark colors, arose from roots signifying "to shine." The principal color-names (generic as well as specific) being derived from radicals signifying "to shine"—in other words, the sunlight being the main source of color—we may come to know how it was that the same color-names stand for different colors in different languages, e. g.: Latin *flavus*, "yellow," corresponds to Teutonic *blava*, "blue"; or for different colors in the same language, e. g.: Greek, γλαυκός, "blue," "green," and "gray."

Again, the words, *glow, gleam, glimmer*, as well as *gloom* and *gloaming* (the twilight), come from root *ghar*, "to shine." *Gloom* appears to mean, first, the flashes of lightning from a thunder-cloud, secondly, the lowering darkness of a thunder-cloud. *Gloaming* is, properly, light by flashes, intermittent light, as at twilight, particularly in high latitudes. *Morning* (*morgen*) and *murky* convey opposite ideas, the former of light, the latter of darkness, but the primitive meaning of both referred to light, i. e., twinkling or intermittent light. *Day, dawn*, and *dazzle*, as well as *dim*, and perhaps *dusky*, are from the root *da*, "to shine"—a root which appears as the basis of a large number of Indo-Germanic words referring to the different phenomena of the visible heavens; *day, dawn*, and *dazzle* describe the brightness, while *dim* and *dusky* describe modified or lessened brightness of the sky, light being the fundamental idea in both cases. *Blind*, from root *bha*, to shine, expresses *blended*, mixed light, when things are not clear.

Certain words, expressing heat and cold, are alike derived from roots which signify to burn; compare Greek αἴθω, "to burn," αἰθων, "burning," with αἰθριος, "cold," from root *idh*, αιθ, "to burn." Sanskrit *çyâ, çyâ-yate*, "to burn," and "to freeze"; *çîta*, "cold," and Latin *ci-nis*, "ashes"; German *hei-ss* and English *heat*; from root, *kî*, "to burn." Sanskrit *plush, ploshati*, "to burn"; Latin *pruina*, "a glowing coal," *prurire*, "to burn," "to itch"; Gothic *friusa*, Old Norse *frostr*, English *frost*, Old High German *freosan*, English *freeze* (cf. German *frostbrand*), from root *prus*, "to burn." Greek καίω, and καῦμα, "to burn," and "to be cold." Latin *uro, urere*, "to burn," and "to freeze" (so used by Cicero, Virgil, Pliny, and many other classic authors), from root *us*, "to burn."

All the cases cited in this paper may be explained by showing that the same or similar names are often given to cause and effect, or to two similar or apparently similar effects from different causes, or to different effects from the same cause.

Professor Fisk P. Brewer, of the University of North Carolina, Chapel Hill, N. C., described a fragmentary Manuscript of mediæval Latin preserved in the Library of the University of South Carolina, and exhibited a copy of it.

It is a single leaf of parchment, bound up with a folio edition of Pliny printed at Treviso, near Venice, in 1479. It is written with two columns to the page, in the style prevalent about 1450. The letter *e* is used for the diphthongs æ and œ; for *nihil* is written *nichil*; for *distrahant, distrant*; for *vehiculum, veiculum*; for *mitto, micto*; for *missus*, sometimes *mixus*; *cura* and *curia* are interchanged; as also *publicatio* and *puplicatio, estimatio* and *extimatio.*

The manuscript is a leaf from the middle of a series of statutes of a king who

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refers to himself by the exclusively regal title of *nostra celsitudo*, and alludes to his own previous *nova statuta*. In the present edicts he orders that market magistrates shall no longer compel citizens to purchase salt in greater quantity than they desire, nor restrict the places where salt and other necessaries of life may be sold. He prohibits officers of the provinces in general, justitiarii, camerarii, and others, from accepting loans and gifts from the provincials, as had been customary under a variety of pretexts. He further commands local authorities to respond promptly to requisitions of procurators for help in preparing camps and buildings and in planting and cultivating vineyards, and, in case of their delay, directs the procurators to have the necessary castle-repairs effected, with the assurance that their expenses shall be repaid from the treasury. The practice of impressing men and animals into the public service without proper compensation, is prohibited. The hire of a man and a horse is fixed at one *tar*, and it is ordered that in the purchase of horses, or the death of hired animals, the value shall be estimated by three or four good and worthy men.

The following words of late Latin are found in this document: *fundicus* connected with our *funds*, meaning a "bourse" or "market-place"; *magistri fundicarii*, "market officers"; *fundicare*, "to pay the market tax"; *bajulus* (bailiff), the title of a magistrate; *azarium* (French acier), "steel."

A recess was taken till 8 o'clock.

Evening Session.

The Association resumed its session, Dr. J. Hammond Trumbull, of Hartford, Conn., Vice-President, in the chair.

The Secretary reported the election of new members as follow:

Rev. W. L. Gage, Hartford, Conn.; Professor G. S. Hall, Antioch College, Yellow Springs, O.; Rev. Charles Hammond, Principal of Munson Academy, Munson, Mass.; Professor Selah Howell, Christian Biblical Institute, Stanfordville, N. Y.; Professor John S. Lee, St. Lawrence University, Canton, N. Y.; Professor R. H. Mather, Amherst College, Amherst, Mass.; Mr. Sydney P. Pratt, Boston, Mass.; Mr. H. B. Richardson, High School, Springfield, Mass.; Professor Charles C. Shackford, Cornell University, Ithaca, N. Y.; Rev. Leopold Simonson, Hartford, Conn.; Professor William Thompson, Theological Institute of Connecticut, Hartford, Conn.; Mr. Minton Warren, High School, Waltham, Mass.; Professor James H. Worman, New York City.

Professor Francis A. March, of Lafayette College, President of the Association, delivered the Annual Address.

The study of the ancient literary monuments of the Indo-European speeches is now giving place to the study of living dialects, and of the relics of the ancestors of barbaric tribes. The more sober western leaders of the new generation are trying to ground the laws of language in physiological necessities and the facts of living dialects; the more adventurous are leaving the familiar fields of the Indo-Europeans.

A brief sketch was given of the work of the year in the study of dialects. An English Dialect society has been formed under the direction of Mr. Skeat and

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the inspiration of Mr. Ellis, and is vigorously at work collecting all the living varieties of English speech, and asking our aid. With it should be put A. J. Ellis's work on "The English Dialects in Great Britain and America," forming a part of his great work on "Early English Pronunciation"; J. A. H. Murray's "Dialect of the Southern Counties of Scotland"; C. C. Robinson on "The Yorkshire Dialects"; Prince Louis Lucien Bonaparte on "The English Dialects," in the Philological Society's Proceedings; Sweet on "Danish Pronunciation"; John Winkler's "General Netherland and Frisian Dialecticon," a thousand solid Dutch pages on the continental Low German dialects; Tobler on "The Aspirates and Tenues in the Dialects of Switzerland," an excellent paper in Kuhn's Zeitschrift; Halévy on "The Dialect of the Jews of Abyssinia"; the Abbé Martin on "The Chief Aramaic Dialects"; Dr. Bleek on "Grimm's Law in South Africa"; Dr. Carter Blake on "The Dialects of Nicaragua"; Mr. Thomas on "The French of the West Indian Negroes," especially at Trinidad; Professor Hartt on "The Language of the Amazons," in our own Transactions; and, most notable of all in its kind, Professor Trumbull's "Notes on Forty Versions of the Lord's Prayer in the Algonkin Languages." The greater part of this work on dialects is done with scientific caution, and is in full accord with the best scholarship of the old school.

In phonology, we have Mr. Ellis's work, and the invention by Mr. W. H. Barlow of an instrument, called a logograph, by which the comparative force and duration of the sound made in speaking is registered.

Of the more adventurous work, mention was made of a grammar by M. Lenormant, of the speech of the primitive population of Babylonia, which is claimed to be a representative of the parent speech of the so-called Turanian or Scythian family of languages, and to be likely to play the same part in reducing the languages to order which the Sanskrit has done in the Indo-European family, and also a comparison of it with Modern Finnish dialects, by Lagus; Mr. Isaac Taylor's book on the Etruscan, trying to show that to be Finnish or at least Turanian; F. Delitsch and J. Grill on "The Relation between the Roots of the Semitic and Indo-European Speeches"; and J. Edkins on "The Relation of the Chinese to the European Roots."

There has been also good work done in the old fields. Pott's great Lexicon of Roots has been completed, and only awaits an index. In the Celtic speeches, especially, we have a number of new undertakings of considerable interest. Chevalier Nigra's essay on the Irish manuscript of St. Gall, and the work of Ascoli on the ancient Irish glosses of Milan, and many articles in the Revue Celtique, are worthy of note, while the publication of a volume of essays in English on Celtic subjects, by Whitley Stokes, and the introduction of Celtic comparisons into the fourth edition of Curtius's Grundzuge, show the firm and familiar establishment of Celtic studies in England and Germany. This year is marked in Scandinavia by the Icelandic Millenial and the completion of Cleasby's Icelandic Dictionary. The early English Text Society has also celebrated with rejoicings and pride the tenth year of its labors, and has finished the texts of Pierce Plowman, and given us a new volume of most welcome Anglo-Saxon Homilies. Then there is the establishment of the New Shakespeare Society and the commencement of scientific and other linguistic examinations of Shakespeare's plays, all apparently going on with enthusiasm.

They are interested in England also, as in this country, in reforming the

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school pronunciation of Latin and Greek; but its promoters seem to be in unreasonable haste, and speak despondingly of the real progress of the year towards the new standard. The advanced studies of women in connection with the university examinations appear a decided success, and their permanent establishment and use seem to be already accepted in England.

After a brief reference to the triumphs of philology, it was asked what the advance of philology may be expected to do for improving the estate of man; and in answer followed discussions of a reform of English spelling; a universal alphabet; improvements in the structure of words, to make language more harmonious, more regular, and better suited to express scientific truth, and to aid in scientific discovery; improvements in the methods of education, and in the selection of objects of study; and changes in the treatment of psychology and the philosophy of history.

At the conclusion of the address, the Association stood adjourned to 9 o'clock Wednesday morning.

Wednesday, July 15th—Morning Session.

The Association met at 9 o'clock, the President in the chair.

On motion, Mr. Alonzo Williams, of Providence, R. I., was appointed Assistant Secretary.

The Treasurer presented his report, which the Auditors certified to be correct, and it was, on motion, accepted. The receipts and expenditures of the past year were as follow:

RECEIPTS.

Balance in treasury, July 22d, 1873,	$1,029.68
Fees of 20 new members,	100.00
Annual assessments,	465.00
Interest,	42.00
Sales of Transactions,	40.06
	$1,676.74

EXPENDITURES.

Printing Transactions, 1872,	$638.84
" Proceedings, 1873,	149.10
Postage, express, stationery, and sundries,	43.82
Secretary's bill for postage, copying, etc.,	27.00
	$858.76
Balance in hands of Treasurer,	817.98
	$1,676.74

Professor W. S. Tyler, of Amherst College, Amherst, Mass., read a paper on "The Prepositions in the Homeric Poems."

The "parts of speech," as they are called by grammarians, are a classification, founded in the nature of language, but inevitably more or less artificial and

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imperfect, of the different kinds of words in their relations to each other and to the sentence. The number has varied much at different times. Aristotle, in one treatise, makes three; in another, four. The Stoics made nine. Some Roman grammarians made ten, eleven, or even twelve. The same words are continually passing from one part of speech into another. Thus, by a progressive falling off of emphasis, the demonstratives in many languages (e. g. English *that*, Greek ὅτι, and Latin *quod*) became first relatives, and then articles or conjunctions.

The prepositions were originally and properly adverbs, few in number, scarcely a score in Greek, about the same number in Sanskrit, and but little more than that number in Latin and the modern European languages. Primitive words with monosyllabic roots, although for the most part made dissyllabic in Greek by the annexation of a final vowel, the *proper* prepositions seem originally to have expressed such essential relations as up and down, over and under, to and from, in and out, on and off, etc., etc., which, in the nature of the case, would gradually pass from mere adverbs denoting the *direction* of motion or action, into prepositions expressing the *relations* between such motions or actions and the places, persons, and things affected by them. In the Homeric Poems we see this class of words in the transition state between adverbs and prepositions, sometimes standing alone with a fully adverbial force, and even when prefixed to a noun or compounded with a verb sometimes hovering between the office and force of the adverb and the preposition. In subsequent writers, such as Sophocles, Herodotus, Xenophon, and still more in the Greek of the New Testament and the Modern Greek, there is a constant decrease of the adverbial and separate use of the prepositions, and a regular and progressive increase of their use both as prepositions governing cases of the noun and as prefixes in compound verbs. A careful examination of all the cases in which words of this class occur in specimen passages of these authors yields the following table of statistics:

	Before Substantives.	Prefixes to Verbs.	By themselves.
Iliad,	47 per cent.	34 per cent.	19 per cent.
Sophocles,	35 "	59 "	6 "
Herodotus,	47 "	53 "	0* "
Xenophon,	41 "	59 "	0 "

Of all the verbs in the specimen passages, in the Iliad about 14 per cent. are compounded with prepositions; in Sophocles, 26; in Herodotus, 32; in Xenophon, 36; in the Acts, 40; in Tricoupes (the Modern Greek historian), 43.

Parallel with this relative increase of verbs compounded with prepositions, and apparently consequent upon the continually diminishing emphasis and force of that class of words, the repetition of the same preposition, both in composition with the verb, and again before the substantive, grows more frequent. There is scarcely a trace of it in Homer or Sophocles. It is rare in Herodotus. In Xenophon, it is not unfrequent.† It is common in the New Testament.

In the Iliad, not only is the verb less frequently compounded with the preposition, but the oblique cases of the substantive occur more frequently without a preposition or any other governing word. And when the preposition does stand before the substantive, or enter into composition with the verb, it seems often to

* That is, none in the passage of several pages which I used as a specimen. There are not wanting sporadic cases of tmesis and adverbial use, e. g., ἀπὸ δ' ἔθανε, vi. 114; μετὰ δέ, vi. 120.

† In such constructions as εἰσ-(or ἐμ-)βάλλειν (or βαίνειν) εἰς; ἐκβάλλειν ἐκ; συνστρατοπεδένεσθαι σύν, etc., etc.

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retain more of its original adverbial force, or to hover between an adverb and a preposition, as in the familiar line, Il. 3, 12:

τόσσον τίς τ' ἐπιλείσσει, ὅσον τ' ἐπὶ λᾶαν ἵησιν.

Professor J. B. Sewall, of Bowdoin College, Brunswick, Me., read the second paper, on "The Distinction between the Subjunctive and Optative Modes in Greek Conditional Sentences."

In a discussion upon this subject at the last meeting of the Association, it was maintained on the one side that the difference between the Subjunctive and Optative modes in conditional sentences was only that of greater and less vividness, on the other that it was a difference in kind between supposed fact as contingent and supposed fact as merely conceived. The object of this paper is to briefly discuss this point.

If we ask how the fact of supposition is presented in the four classes of Greek conditional sentences respectively, the answer will be somewhat as follows:

1. In a conditional sentence of the first class there is a supposition relating to the actual state of the case—to reality; e. g. Dem. Phil. 1., 29, *εἰ δέ τις οἴεται . . . οὐχ ὀρθῶς ἐγνωκεν*, "if any one thinks . . . he has not judged rightly." It is a question of what really is, a supposition relating to actual fact. No implication that it is or is not reality is involved. Xen. Mem. 2, 1, 28, *ἀλλ' εἴτε τοὺς θεοὺς ἵλεως εἶναί σοι βούλει, θεραπευτέον τοὺς θεούς*, "if you wish the gods to be propitious, you must serve the gods." Do you wish, or do you not wish? It is a question of actual fact. So always. And if we should characterize a condition of the first class from the manner of its presenting the fact in supposition, we should call it a supposition relating to actual fact, or, for the sake of brevity, supposition of actual fact, generally implying nothing as to its existence in reality one way or the other, though sometimes assuming or taking it for granted.

2. In the second class, having secondary tenses of the indicative in both condition and conclusion, we have plainly a supposition implying the contrary to be the fact; e. g. Dem. Phil. 1., 1, *εἰ μὲν περὶ καινοῦ τινὸς πράγματος προυτίθετο λέγειν, ἡσυχίαν ἂν ἦγον*, "if it were proposed to treat of any new subject, I would keep silence;" implying plainly that it is not proposed to treat of any new subject, and therefore he does not keep silence. Id., ib. 5, *εἰ τοίνυν ὁ Φίλιππος τότε ταύτην ἔσχε τὴν γνώμην, οὐδὲν ἂν ὧν νυνὶ πεποίηκεν ἔπραξεν*, "if then Philip at that time had entertained this opinion, he would have done none of those things which he has done;" implying that he did not entertain this opinion at that time. We may characterize a condition of this class therefore as a supposition implying the contrary to be the truth, or, for brevity, a supposition of contrary fact.

3. Passing the third class for the moment, we have in the fourth class *εἰ* with the optative in the condition, and the optative with *ἂν* in the conclusion; e. g. Dem. Phil. 1., 25, *εἰ γὰρ ἐροιτό τις ὑμᾶς, εἰρήνην ἄγετε, ὦ ἄνδρες Ἀθηναῖοι; μὰ Δί' οὐχ ἡμεῖς γε, εἶποιτ' ἄν*, "for if any one should ask you, 'Are you at peace, O Athenians'? 'No, by Zeus, we are not,' you would say." The fact of supposition is here put forward as merely hypothetical—a fact of conception, without reference or implication in any way or kind as regards actual fact. It is not future any farther than a supposition of fact not a reality now nor in the past must be in the future if at all. The verbs in the condition and the conclusion are both in the aorist, which means that the Greeks eliminated the facts of the supposition

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from the element of time and held them in the mind as mere conceptions, never having been, not now being, never to be, in reality, so far as this assertion is concerned. Plato, Phaedo 67, B, *εἰ φοβοῖντο καὶ ἀγανακτοῖεν, οὐ πολλὴ ἂν ἀλογία εἴη*; "if they should fear and complain, would it not be very absurd?" Here again the fact of supposition is purely hypothetical, placed before the mind as a conception, without any reference or implication in relation to reality. So generally. The optative in the conditional sentence is the mode of possibility, that which might be, the mode of fact simply as conceived. And we may characterize a condition of the fourth class as a supposition of conceived fact.

4. We will return now to a condition of the third class, *ἐάν* with the subjunctive, etc. Plato, Phaedo 69, D, *ἐκεῖσε ἐλθόντες τὸ σαφὲς εἰσόμεθα, ἐὰν θεὸς ἐθέλῃ*, "when we shall have arrived there, we shall know the truth, if God wills." The subjunctive *ἐθέλῃ* here expresses an action continuing, uncertain, and future. The continuousness arises from the tense, the futurity partly from the tense of the principal clause, and partly from the mode, which, it seems to me, we may describe as the mode of uncertainty or contingency, i. e., the mode by which the Greeks chose to represent an action as uncertain, whether in reality it was so or not. *Εἰσόμεθα* expressly declares a fact, "we shall know," but it is contingent, and the mode used to express that contingency is the subjunctive. What would be the force of the sentence if it were a conditional of the fourth class? It seems plain that the assumed fact, *ἐλθόντες ἐκεῖσε*, would be thrown into the form of a simply conceived fact of condition, "if we should arrive there," and the conclusion also, "we should know," and the present condition, now only expressing uncertainty, would become a second condition, likewise of simply conceived fact, "if God should will." That is, the sentence in the first form positively declares a fact with a condition of mere contingency; in the second, it presents both the fact and its conditions merely as conceptions. The difference, therefore, is not one of degree, more or less vividness, but of kind, mere uncertainty or contingency on the one hand and pure conception on the other. So in the following examples: Dem. Phil. I., 29, *τοῦτ' ἂν γένηται, προσποριεῖ τὰ λοιπὰ αὐτὸ τὸ στράτευμα ἀπὸ τοῦ πολέμου*. Thucyd. II, 39, 4, *ἢν δέ που μορίῳ τινὶ προσμίξωσι, κρατήσαντές τε τινὰς ἡμῶν πάντας αὐχοῦσιν ἀπεῶσθαι*. The latter is a general supposition, yet well illustrates the nature of the subjunctive as the mode of uncertainty or contingency.

The conclusion reached is, that the subjunctive in conditional sentences differs from the optative in that it is a form to represent the fact as uncertain or contingent, while the optative is a form to represent it as merely conceived; and that the four classes of conditional sentences may properly, and with sufficient accuracy, be thus described: the first, *εἰ* with the primary tense of the indicative, as a supposition relating to actual fact; the second, *εἰ* with the secondary tense of the indicative, as a supposition relating to contrary fact, or implying that the contrary is the truth; the third, *ἐὰν* with the subjunctive, supposition relating to contingent fact; the fourth, *εἰ* with the optative, supposition of conceived fact.

Professor L. R. Packard, of Yale College, New Haven, Conn., read a paper on "Homer's Odyssey, Book X., vv. 81–86."

The difficulty of the passage was illustrated by a review of the various explanations, ancient and modern, that have been suggested. The first line, and half of the second, it was shown, cannot be positively and precisely explained from the want of sufficient data. Only with regard to *τηλέπυλον* it was urged that it

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cannot mean "having high or wide gates," as some take it, but must mean "having gates far apart," a distance, either—as Nitzsch thinks—measured on the diameter, and so "long-streeted," or perhaps more probably measured on the circumference, and so "large in circuit," a description of the greatness of the city in Epic style.

It was pointed out in regard to the rest of the passage that previous explanations generally involve some assumption for which there is no ground here or elsewhere in Homer. Thus Nitzsch assumes, from the mention of two kinds of cattle in line 85, that cows are driven out earliest in the morning, and sheep come home latest at evening. So J. F. Lauer assumes that this meeting takes place at evening, and that the sheep-herd coming in greets the cow-herd going forth.

The view maintained in the paper assumed only this, as naturally in the mind of poet and hearers, that all kinds of flocks naturally spend only the day in pasture, and the night under the protection of the herdsman's home. This is the representation elsewhere in Homer, e. g., in regard to the Cyclops (Od. 9 *passim*), and to Eumaeus, (Od. 14, 13–22; 16, 3). This familiar idea is applied to the Laestrygonian country, without thought that the absence of any night there makes it inappropriate, and it explains the mention of the two kinds of flocks in line 85. A man who could dispense with sleep could be in the pasture through the twenty-four hours, but either kind of animal would naturally be at home for half of that time.

In the last line most explanations have translated ἐγγύς "near to one another." The word occurs some forty-five times in Homer, and in thirty-three cases in such a way (either because the subject is singular, or because some local genitive depends upon ἐγγύς) that it cannot mean "near to one another" but only "near" to something else. Of the other eleven cases (not counting the line under discussion), which all resemble this in plurality of subject and absence of dependent genitive, only one admits the meaning "near to one another." The usual word for reciprocal nearness is πλησίος. The plain inference is, that the line means "for near (to the home of the Laestrygonians) are the paths of day and night." The following journey is all near to this place, and all in a region of marvels, which is such because of its nearness to the western home of the sun (cf. Od. 10, 130; 12, 3 f., 166, 175 f., 201, 261, 284–93). The whole story is probably a natural exaggeration of the stories of shorter nights in higher latitudes brought home by sailors, which seems to be localized near sunset, and described without any thought of logical consistence in the parts of the fable.

Professor M. L. D'Ooge, of the University of Michigan, Ann Arbor, Mich., read the last paper of the afternoon, on "The Documents in Demosthenes on the Crown."

Professor Lipsius, of Leipzig, called my attention, not long since, to a new argument against the genuineness of the documents in the oration of Demosthenes on the Crown, which was first stated in its general bearing by Prof. Sauppe, of Göttingen.

1. Stichometric enumerations are found not only in Σ, but also in the MSS. of other families, as in Venetus F and in Bavaricus, and these enumerations correspond so closely as to warrant the inference that they have all a common source in one and the same original codex.

2. It appears that the count of these ancient στίχοι is in proportion to the length of the speeches and the number of the lines in our editions: e. g., in

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Orat. pro Halon., 345 στίχοι = 326 lines in Reiske; in Orat. de Cherson., 590 στίχοι = 559 lines R.; so in

I. Olynth., 265 στ. = 238 lines R.;
II. Olynth., 295 " = 272 " ";
II. Phil., 290 " = 266 " ".

From this comparison we deduce a ratio of 30 στίχοι to 29 lines (= 1 page) of Reiske.

3. Applying this ratio to the Orat. de Corona we obtain the following: The number of στίχοι is given at the close of Σ as 2768, which would equal—according to our ratio—92 pages of Reiske; but with Reiske the oration has 107 pages, and this difference of 15 pages corresponds almost exactly to the 450 lines which are taken up by the documents in Reiske. Or, to state it differently, according to the ratio of 29 : 30, the oration, inclusive of the documents, should contain about 3200 στίχοι, whereas the number contained is stated to be only 2768. That the documents are found in Σ does not, of course, invalidate this argument, since it applies only to the original root-codex, from which this enumeration is supposed to originate. Nor would this result be materially different if we suppose with Blass, in Rhein. Museum, 24, that these στίχοι are not lines, but oratorical periods—κῶλα—since according to the figures above given, these κῶλα, if not individually of about the same length, must yet collectively have occupied about the same ground.

An invitation from Professor Brocklesby, acting President of Trinity College, to visit the College buildings and grounds, was accepted with thanks.

An invitation from the Faculty of the University of Mississippi, to hold the next meeting of the Association at Oxford, Miss., was referred to a committee (to be raised) on the time and the place of the next meeting.

The Association took a recess until 2½ o'clock P. M.

Afternoon Session.

The first paper of the afternoon was read by Professor Charles Short, of Columbia College, New York, on "The History of the Vulgate, and the Characteristics of its Latinity."

The author traced the history of the Latin version from its probable origin in North Africa in the second century to its revision by St. Jerome in the fourth, its acknowledgment by Gregory the Great in the sixth, and its formal revision, sanction, and adoption by the Roman See in the sixteenth century. He then proceeded to give the results of a minute critical examination of about one-fourth of the Gospel of St. Matthew, using Dr. Tisdendorf's edition of the *Codex Amiatinus* of the sixth century, the purest form of St. Jerome's revision now known to us.

These results were given under the following heads and illustrated in most cases by all the examples occurring in the portion of St. Matthew above designated.

(1) The order of the original is exactly preserved by the Vulgate in most instances, with here and there an unavoidable departure, and sometimes a departure that might easily have been avoided.

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(2) Many of its renderings are very close in sense or form or both.

(3) Certain of its renderings are more or less inexact or faulty.

(4) Many of its renderings are in strict accordance with the Latin idiom, even when the Latin idiom differs from the Greek.

(5) It presents instances of judicious freedom in idiomatic translation.

(6) It not unfrequently renders the Greek literally in violation of the Latin idiom.

(7) Some of its words, forms, and phrases are in very unusual, but still authorized Latin.

(8) In its use of moods the Vulgate commonly observes the nicety of classic usage; but the infinitive is sometimes employed to denote purpose, as in Latin poetry; the subjunctive is in a few instances used without apparent reason after *quoniam* and *quia;* and in one case we have the indicative employed in an indirect question, as in the early and the late Latin poets.

(9) In the use of particles the Vulgate commonly conforms to classic rule even in delicate points, but some of its uses of particles are unusual and others are unexampled.

It is the author's purpose to examine in the same manner a part of the Acts and the Epistles, this portion of the New Testament, as is supposed, not having been revised at all by St. Jerome or only very cursorily, and to compare the results of such examination with the foregoing.

Professor W. D. Whitney, of Yale College, New Haven, Conn., read a paper on "The Proportional Elements of English Utterance."

If we are rightly to estimate the phonetic character of a language, it is necessary for us to know not only the sounds which compose its spoken alphabet, but also the comparative frequency of their occurrence. In order to determine this latter for the English language (according to my own natural pronunciation of it), I have made a selection of ten passages, five in prose and five in poetry, from as many different authors, and analyzed and enumerated the sounds occurring in them, until the number of 1000 sounds was reached in each; then, adding the ten numbers for each sound together, I obtained the proportional rate of occurrence of each in 10,000 sounds; which probably gives a fairly approximative average for the language in general.

The ten selected passages were as follows: 1. from Shakespeare's "Julius Cæsar," the beginning of Antony's speech over the body of Cæsar, 288 words; 2. from Milton's "Paradise Lost," the beginning, 274 words; 3. from Gray's "Elegy," the beginning, 272 words; 4. from Bryant's "Thanatopsis," the beginning, 283 words; 5. from Tennyson's "In Memoriam," of section lxxxiii., 284 words; 6. from King James's Bible version, of Psalm xxvii., 319 words; 7. from Dr. Johnson's "Rasselas," the beginning, 263 words; 8. from Goldsmith's "Vicar of Wakefield," the beginning, 269 words; 9. from Carlyle's "Sartor Resartus," book ii., ch. 8, eighth paragraph, 258 words; 10. from Macaulay's essay on Milton, part of the passage on the Puritans, 236 words.

The main results are given in the following table, which is so arranged that it may serve as a scale of frequency either for the whole alphabet or for the vowel and consonantal systems taken separately. The figures, if read without the decimal point, give the whole number of occurrences of each sound in the 10,000 sounds; the decimal point converts them into expressions of percentage. And as it is of interest to note the limits of variation in the rate of occurrence of each sound, there is added a column of *minima* and *maxima*, or of the least and the

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greatest number of occurrences found in any of the single passages of 1000 sounds; these also are converted into percentages by the decimal point.

SCALE AND RATE OF FREQUENCY OF ENGLISH SOUNDS.

Consonants.	Vowels.	Per cent.		Min. and Max.
r		7.44		5.4 — 9.3
n		6.76		5.7 — 7.9
t		5.93		4.6 — 8.9
	ĭ		5.90	4.7 — 7.4
	ə		5.66	4.3 — 6.9
d		4.94		4.0 — 5.8
s		4.69		3.7 — 5.8
l		3.84		2.5 — 6.2
dh		3.83		2.4 — 5.1
	ĕ		3.34	2.6 — 4.7
	æ		3.32	2.4 — 4.0
m		3.06		1.8 — 4.1
z		2.92		2.2 — 4.3
	ī		2.80	1.5 — 4.8
	ă		2.59	1.8 — 4.2
v		2.37		1.4 — 3.5
h		2.34		1.2 — 3.1
w		2.31		1.6 — 3.0
k		2.17		1.1 — 3.1
f		2.06		1.2 — 2.8
	ū		2.00	1.1 — 3.5
	ai		1.91	.9 — 4.8
	ɜ		1.85	.9 — 2.5
	ō		1.76	.9 — 2.6
p		1.71		1.0 — 2.6
b		1.64		1.0 — 3.4
	ē		1.61	.5 — 2.7
	ʌ		1.54	.8 — 2.2
sh		.86		.1 — 1.8
	au		.83	.3 — 1.3
g		.79		.3 — 1.6
ng		.79		.1 — 1.4
y		.66		.3 — 1.1
th		.58		.2 — 1.0
	a		.56	.1 — 1.2
ch		.53		.1 — 1.2
	Æ		.47	.0 — 1.4
j		.47		.1 — .9
	ŭ		.44	.2 — 1.2
	l̥		.35	.1 — .7
	n̥		.16	.0 — .3
	ʌi		.12	.0 — .2
	ŏ		.08	.0 — .2
zh		.02		.0 — .1
		62.71	37.29	

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In the scheme of representation here used, *a* denotes the open or "Italian" *a* of *far;* *ă*, the sound in *what, not* ("short *o*"); *ʌ*, that in *all, awe;* *æ*, that in *fat, man* ("short *a*"); *ӕ*, that in *care, bear* (in my mouth, a lengthened *æ*, with transition-sound to following *r*); *ĕ*, the "short *e*" of *met, pen;* *ē*, the sound in *they, mate* ("long *a*"), a somewhat closer *e*-sound than *ĕ*, and having a vanish of *i* (*ee*); *ĭ*, the "short *i*" of *pin;* *ī*, the sound in *pique, meet* ("long *e*"); *ŏ*, the true short *o*-sound heard in New England in a few words, like *whole* and *home;* *ō*, the "long *o*" of *hole*, having a vanish of *u* (*oo*), as *ē* of *i;* *ŭ*, the true short *u*-sound of *pull, wool;* *ū*, the pure *oo*-sound of *rule, fool;* *ə*, the short "neutral vowel" sound in *but, son, blood;* *ɜ*, the corresponding long, before *r*, as in *hurt, heard, herd, mirth, world;* *ai*, the diphthongal sound in *aisle, isle* ("long *i*"); *au*, that in *now, found;* *ʌi*, that in *boy, boil;* the *l* and *n* with subscript *o*, the consonantal vowels in unaccented final syllables like *apple* and *feeble, reckon* and *lessen*. As for the consonants, it is only necessary to explain that *th* denotes the surd sound in *thin*, and *dh* the sonant in *then;* *ng*, the palatal (or "guttural") nasal in *singing;* *sh*, the sibilant in *she, sure, nation;* *zh*, the corresponding sonant in *azure, occasion;* *ch* and *j*, the surd and sonant sounds in *church* and *judge*, which are compound, and might have been better treated here as such, being analyzable into *t-sh* and *d-zh*, only with a *t* and *d* formed farther back, more palatal, than our ordinary "dental" or lingual letters; if they are distinguished, it would be necessary also to distinguish the corresponding more palatal *n* of *inch* and *hinge* (it occurs 13 times in the 10,000 sounds).

In the number of occurrences given for *a* (of *far*) are included all such cases as *chance, pass, path, raft*, which I pronounce with the full "Italian" sound, knowing no compromise or intermediate whatever between this sound and the flat *a* of *fat* and *man;* if those classes be uttered with a somewhat flattened vowel, as is now very usual, and even enjoined by the orthoëpists, the percentage of *a* will be reduced almost to nothing. The short neutral *ə*, as given, includes the neutralized vowels of unaccented syllables (e. g. in *woman, distant, penal, nation, miller, presence*), and of enclitic words (like *the* and *a*), as judged and estimated from an ordinary reading style of utterance, neither affectedly distinct nor careless and slovenly. The percentage of *r* includes all the cases in which that letter is written; if, according to a habit which is widely prevalent both in this country and in England, the *r* be really uttered only when it has a vowel after it, the figure will be reduced to 3.74. Under *h* are counted the occurrences of that sound before the *w* and *y* sounds, as in *when* (*hwĕn*) and *hue* (*hyū*), where some hold that they pronounce instead only a surd *w* and a surd *y* before the vowel: the cases like *when* number 39 in the 10,000 sounds; those like *hue*, only 4. The "long *ū*" of *use, pure, cube*, etc., is analyzed and reckoned as *yū*, my own natural pronunciation recognizing no intermediate between this and a pure *ū* (*oo*).*

The table shows that the average proportion of vowels to consonants in English is 37.3 to 62.7 (the minimum and maximum of vowels are 35.7 and 39.6). This is just about the same as in German, a little less than in Swedish (38.3) or French (about 40), yet less than in Gothic (41), Sanskrit (42), Latin (44), or Greek (46). The average number of consonants to a syllable, then, is 1.682. The whole number of words in the ten passages being 2746, the average number of sounds

* For other details, which cannot well be included here, of the definition and estimate of the various sounds, reference may be made to the author's paper on "The Elements of English Pronunciation," in the second volume of his "Oriental and Linguistic Studies," published in the autumn of 1874.

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to a word is 3.642; that of syllables to a word is 1.358: that is to say, there is a second syllable for only about one word in four: the actual number of monosyllables in all the passages is 2028, or 73.8 per cent.; of dissyllables 510, or 18.6 per cent.; of trisyllables, 146, or 5.3 per cent.; and the words of four syllables are 50; of five syllables, 11; of six syllables, 1.

It may be worth while to make a few more general combinations and comparisons. First, the vowels may be classified as follows:

Palatal (*æ, e, i*),	17.44	Openest (*a*),	.56
Labial (*ʌ, o, u*),	8.41	Next degree (*æ, ă, ʌ*),	7.92
Lingual ($\overset{l}{\delta}$, $\overset{n}{\sigma}$),	.51	Medial (*e, o*),	6.79
Neutral (*a, ə*),	8.07	Closest (*i, u, ə*),	18.65
Diphthongs,	2.86		

The consonants, classified according to articulating organs, are as follows:

Palatal,	6.29
Labial,	13.15
Lingual,	40.93
Neutral (*h*),	2.34

According to degree of closeness or openness, they are:

Mutes	(sonant 7.84, surd 10.34),	18.18
Spirants	(sonant 6.20, surd 2.64),	8.84
Sibilants	(sonant 3.41, surd 6.08),	9.49
Nasals,		10.61
Semivowels,		14.25
Aspiration,		2.34

Finally, comparing the surd and sonant elements, we have—

	Of pairs of Cons.	Of all Cons.	Of whole Alphabet.
Surds,	18.53	20.87	20.87
Sonants,	16.98	41.84	79.13

Dr. J. Hammond Trumbull, of Hartford, Conn., next read a paper on "Numerals in American Indian Languages, and the Indian Mode of Counting."

No exception has been found in American Indian languages to Grimm's dictum that "all numerals are derived from the fingers." The greater number of the Indian nations of North America adopted a *decimal* system—counting the fingers of both hands. Some tribes, however, did not advance beyond a *quinary* system, and a few were poorer even than this. The Abipones of Paraguay, we are told, could not count beyond four, giving to that number a name meaning "the ostrich's toes" (i. e. three and one). Other nations, particularly the Mexican and Central American, counted by *twenties* instead of tens or fives, reckoning *toes* as well as fingers, for the base of a numeral system. The Tule Indians of Darien (a vocabulary of whose language was printed in last year's Transactions) adopt this mode of counting: "twenty" being named "one man"; 100, "five men," and so on. A general view of these vigesimal systems was given by Mr. Gallatin in 1845 (Transactions of the American Ethnological Society, vol. i.), and was incorporated by A. F. Pott in his *Zahlmethode*.

Admitting the derivation of numerals from the fingers, the question In what order are the fingers counted? becomes a necessary preliminary to the analysis of any numeral series. Which finger represents *one?* Is it the little finger, or—

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as in the counting of deaf mutes—the *thumb*? And when going from "five" to "six," that is, from one hand to the other, is the sequence from finger to finger, thumb to thumb, or thumb to finger?

The only answer given by Gallatin or Pott to such questions relates to the Eskimo numerals. We learn from other sources that nearly all American nations follow the same order as the Eskimos: namely, they count the little finger (usually of the left hand) *one*, the next finger *two*, and so on to the thumb, which is *five;* the thumb of the other hand is *six*, and *ten* falls on the little finger of that hand. Each finger as it is counted is bent down.

Whether an Indian marks *one* by his little finger or his thumb may seem of small importance to philology; but it is one of the thousand questions which a philologist must answer before becoming qualified to discuss the subject of Mr. Robert Ellis's volume "On Numerals as Signs of Primeval Unity among Mankind" (London, 1873). This writer presents, as "results of primeval affinity—indications of unity of origin in human speech and probably in the human race"—a number of presumed "coincidences, affecting not only numerals but also the names of members of the body from which those numerals are derived, in languages far removed from each other," and he finds many of these coincidences among Indian languages of America. He detects resemblances between names for "hand," "finger," "five," etc., in the Indian and in the Basque, the original Aryan, and some African languages. Even the much-vexed dice of Toscanella are made to show the likeness of an Etruscan *one* to a Comanche *hand* and an African *finger*.

After brief notice of Mr. Ellis's ingenious volume, the writer proceeded to offer some observations on the etymology of Indian numerals, and on the relations of names for numbers to the several fingers by which the numbers are designated. The little-finger, which stands for *one*, is called by some nations "the youngest son of the hand"; by others, "the little one," "the last born," etc. *Paysuk*, the Massachusetts name for *one* (*bezhik* in Chippeway) means "the little one." *Wanzhidan*, the Sioux *one*, probably means "the little (finger) bent down," as it is in counting *one*. The fourth or ring finger is nameless in many languages. The Indians often designate it as "next to the little" or "next to the middle" finger. It marks—but rarely if ever gives a name to—*two*. Some names for *two* seem to have been derived from roots meaning "to couple," "to double," or the like. Such roots must be of earlier origin than any formal arithmetical system. The dual is older than the plural. From these same roots come names of natural *pairs*, so that in many languages we find a likeness to *two* in the names of "hands," "arms," "feet," "eyes," etc. Names of *artificial* pairs—moccasins, leggings, mittens, etc.—sometimes come by later derivation from the same roots, or from the numeral *two*. In all the Algonkin languages, in the Dakota, and in some others, *two* and *hands* are very nearly related—the name for hand being derived in many of these languages from a root meaning "taking hold." The hand is the "holder" or the "seizer." The *middle* finger is so named in almost all languages, and in many it gives this name to the numeral *three*. *Eight*, which falls on the same finger of the other hand, is often named "the other three," "three again," or the like. The *forefinger* is the "index" or "pointer," as it has been in many languages of the eastern continent. It marks *four*, and names for *four* are often derived from it or from the action of "showing" or "pointing at." In the Massachusetts language *yau*, "four," is nearly identical with *yeu*, "this, that, here." The *thumb* does not often give names to the *five* and *six* which are counted on it. It is called by the Algonkins, "greatest finger"; by the

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Dakotas, "parent (or eldest brother) of the hand"; by the Choctaws, "hand's mother," etc. *Five*, that is, *one hand*, is variously named, as "a half" (i. e. of *ten*), "one side," "a stopping place," "all together," "half way," etc.

The other numerals, to *ten*, were similarly discussed, with illustrations from various Indian languages.

A recess was then taken until 8 o'clock.

Evening Session.

On re-assembling, the Secretary reported the following names of new members:

Mr. L. A. Sherman, New Haven, Conn.; Mr. M. C. Stebbins, Principal of High School, Springfield, Mass.; Professor C. T. Winchester, Wesleyan University, Middletown, Conn.; Professor John H. Wright, Ohio Agricultural and Mechanical College, Columbus, Ohio.

Rev. Carl W. Ernst, of Providence, R. I., presented a paper on "The Pronunciation of German Vowels."

It was attempted to arrange these sounds scientifically and in the form of a table, the *fundamentum divisionis* being physiology rather than history or merely anatomy. The question when or where in a word certain vowel-sounds occur, it was stated, can be determined only after an analysis of the vowels, and when the laws of accentuation are defined. The vowels, for the present purpose, were explained genetically as the *voice uninterrupted*, consonants being vocalized or unvocalized breath checked by the tongue or teeth or lips. German vowels are simple or mixed; mixed or diphthongs when consisting of two sounds most intimately united. The *simple* vowels were divided, as to quality, into eight *long* sounds (a, e, i, o, u, ä, ö, ü), and seven *sharp* sounds (a, e, i, o, u, ö, ü), the term sharp differing from short, and being equivalent rather to abrupt. These sharp vowels are not long vowels abbreviated, but differ from them materially, and are pronounced farther back in the mouth and with the tongue lowered. As to quantity or time of utterance the vowels were divided into eight long vowels (the same as above), and ten short vowels (the sharp vowels and the three diphthongs), short merely meaning that they occupy little time and about one-fourth of the time occupied by the long vowels. The language has three *diphthongs:* au, ai (also spelled ei, ey, ay), oi (also spelled eu, äu, æu), which are always short and present to the ear the rapid transition from a sharp to a long vowel. The term *open* was used of the distance between the vocal chords, which is greatest, or as great as taste and ease of individual elocution will permit, in u, gradually diminishing through o, a, and e, it being smallest in i; i is therefore the "closest" vowel in German, and requires the least emission of breath. The aperture of the lips, horizontally and perpendicularly, is greatest in a, growing systematically less in e, i, o, and is as slight as possible in u. The lips protrude most in u, less in o, their position is normal in a, they are pressed gently against the teeth in e, and rather strongly in i. The larynx correspondingly rises in i, less in e, its position is normal in a, below this in o and u. The vowels ä, ö, ü, are pronounced like a, o, u; only the vocal chords and the larynx have the same position as in i. The relation between the vowels approaches mathematical accuracy.

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Col. T. W. Higginson, of Newport, R. I., next read a paper on the word "Philanthropy."

It has been said that there is more to be learned from language itself than from all that has been written by its aid. It is possible to reconstruct some part of the moral attitude of a race through a word of its language. This paper may illustrate such a process.

When a word comes into existence, its meaning is carved on the language which holds it. If you find the name of a certain virtue in any tongue, the race which framed that language knew that virtue. The word Philanthropy is a modern word in the English language. The Pilgrim Fathers may have practised what the word meant, but few among them had heard the word, perhaps none had used it. It is not in the writings of Chaucer or Spenser or Shakespeare, nor even in the authorized version of the English Bible, first published in 1611. The corresponding Greek word, occurring three times in the original, is each time translated by a circumlocution. The word Philanthropy does not appear in the pioneer English Dictionary—Minsheu's Guide to the Tongues, first published in 1617, nor in the Spanish Dictionary of the same Minsheu, in 1623. But two years later, in the second edition of the Guide to the Tongues, it appears as follows, among the new words distinguished by †; "Philanthropie: Humanitie, a loving of men:" and then follow the Greek and Latin words as sources of derivation.

This is its first appearance as an English word. But Lord Bacon, publishing in the same year (1625) his essay on Goodness and Goodness of Heart, uses the original word as follows: "I take goodness in this sense, the affecting of the weal of men, which is that the Grecians call *Philanthropia;* and the word Humanity (as it is used) is a little too light to express it."

The next author who uses this word is Jeremy Taylor. In his Holy Dying, (published 1651), he translates the Greek word *φιλάνθρωπος* "a lover of mankind," but in his Sermons, published a year later, though perhaps preached earlier, he uses the English word, the phrase being "that godlike excellency, a philanthropy and love to all mankind;" and again, "the philanthropy of God." The word took root slowly. In 1693, in a preface to Sir H. Steere's version of Polybius, Dryden used it with an apology, thus: "This philanthropy, which we have not a proper word in English to express."

Three leading writers of their century—Bacon, Taylor, and Dryden,—thus furnish the milestones that mark the entry of the word philanthropy into our language. Doubtless the reason of its use is correctly stated by Dryden; it was needed.

The Greek word *φιλανθρωπία* gave the avowed key-note for the greatest drama preserved to us and also for the sublimest life of Greece. It seems to have been first used by Epicharmus, who was born about 540 B. C. Its first important use was in the Prometheus Bound of Aeschylus, probably represented about 460 B. C. The vengeance of Zeus has fallen upon Prometheus for his love of man; he is to be bound to the desert rock for his philanthropy, *φιλανθρώπου τρόπου* (lines 11, 28). In the most magnificent soliloquy in ancient literature, Prometheus accepts the charge and glories in his offense; he admits that he has conveyed the sacred fire of Zeus to men, and thereby saved them from destruction. The philanthropic man is exhibited under torment for his devotion, but refusing to regret what he has done. There is no play in modern literature which turns so entirely on the word and the thing, philanthropy.

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In the Euthyphron of Plato (§ 3), Socrates uses the word thus, replying to an opponent (Jowett's translation): "I dare say that you don't make yourself common and are not apt to impart your wisdom. But I have a benevolent habit (*ἀπὸ φιλανθρωπίας*) of pouring myself out to everybody, and would even pay for a listener, and I am afraid the Athenians know this."

Coming down to later authors, we find the use of the word in Greek to be always that for which it was imported into English. How apt we are to say that the Greeks thought only of the state, not of individuals, nor of the world outside! Yet Isocrates heaps praises on a man for being *φιλάνθρωπος καὶ φιλαθήναιος καὶ φιλόσοφος*. Demosthenes uses *φιλανθρωπία* in contrast to *φθόνος* and to *ὠμότης*, and speaks of employing philanthropy towards any one, *φιλανθρωπίαν τινὶ χρῆσθαι*. Xenophon makes Cyrus describe himself on his death bed as *φιλάνθρωπος*, and Plutarch sums up the praises of a youth by the same epithet, in the passage translated by Jeremy Taylor. Plutarch also, in his Life of Solon, employs the word *φιλανθρώπευμα*, a philanthropic act. Epictetus (Fragm. 46) says that nothing is nobler than *φιλανθρωπία*. Diodorus speaks of a desert country as *ἐστερημένη πάσης φιλανθρωπίας*—destitute of all philanthropy, or, as we might say, "pitiless."

We have then a virtue thus named, which dates back within about two centuries of the beginning of authentic history. Some of the uses of the word have almost disappeared; such as its application to Deity. Aristophanes (Peace, 394) applies it thus to Hermes: *Ὦ φιλανθρωπότατε*; and Paul uses it similarly in Titus iii. 4. Athanasius uses it as a complimentary form of address, *Ἡ σὴ φιλανθρωπία*, as Englishmen might say "your grace" or "your clemency" to a titled person, and even Americans say "your honor" to dignitaries. In modern literature Jeremy Taylor, Barrow, and Young use the word in application to the Deity, but this is now rarely heard. With the Greeks, the word did duty in the double sense of "the fatherhood of God and the brotherhood of man."

It is hardly just in Max Müller to say that "humanity is a word for which you look in vain in Plato or Aristotle" without alluding to this history of the elder word. Even the omission of the word and thought in Aristotle was criticized before Max Müller by Plutarch, who says (in his "Fortune of Alexander") that Aristotle advised Alexander to treat the Greeks as friends and kinsmen, but the barbarians only as animals or chattels; but that Alexander wished that all should regard the whole world as their common country, the good as fellow-citizens, the bad only as foreigners—that every good man should be esteemed a Hellene, every evil man a barbarian. The Stoics are represented as teaching that we should look upon all men in general as our fellow countrymen. The Pythagoreans, five centuries before our era, taught the love of all to all. Menander said: "To live is not to live for one's self alone; let us help one another." Epictetus maintained that "the universe is one great city full of beloved ones, divine and human, endeared to each other." The same chain of thought was continued down through the Latin writers. Terence, Cicero, Quintilian, and Juvenal may be cited to similar effect.

It is a remarkable fact that the word "philautie" for "self-love" from the Greek *φιλαυτία*, was introduced by Minsheu, at the same time with "philanthropie," and was used by Holinshed and by Beaumont and Fletcher, but is now obsolete. The bad word died of itself, but the good word took root and flourished.

Our debt to the Greek race is not merely scientific or æsthetic, but in some

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degree moral and spiritual as well. However vast may be the spread of philanthropy in Christendom, we should give the Greek race some credit for the spirit, since at all events we must give them full credit for the word.

On motion, Professor Whitney, Mr. Buckingham, Professor Seymour, Professor Young, and Professor Haldeman were appointed a committee to nominate officers and members of the Executive Committee for the ensuing year.

On motion, Dr. Trumbull, Col. Higginson, Professor W. F. Allen, Professor Comfort, and Professor Tyler were appointed a committee to recommend a place and a day for the next meeting of the Association.

The Association stood adjourned to 9 o'clock A. M.

Thursday, July 16—Morning Session.

At the opening of the morning session, Professor Albert Harkness, of Brown University, Providence, R. I., read a paper on "The Formation of the Tenses for Completed Action in the Latin Finite Verb."

The Latin, Greek, and Sanskrit undoubtedly inherited, from the mother tongue of the Indo-European Family, the power to express completed action by means of *reduplication*, and to create new tense-forms through the help of *auxiliary verbs*. The Latin is, however, distinguished from the Greek and Sanskrit by a freer use of compound tense-forms to supply the place of the reduplication. Indeed, in all tenses for completed action, except the perfect, compound forms alone are used. In *cecineram*, for instance, we at once recognize the modified stem *cin*, which gives the general meaning of the verb, the reduplication *ce*, which denotes completed action, and the auxiliary *eram*, which adds the idea of past time. We have, therefore, an expression for completed action in past time. But the analysis of *cecinissem* is more difficult. Corssen explains it as compounded of *cecin*, *i*, and *ssem*, but he does not show the origin or the use of the long *i*, a fact which renders his explanation comparatively worthless. But *cecinissem* may be formed from *cecin* and *essem*, originally *esem*, which became *isem* in compounds, as *cecinisem;* then by a subsequent doubling of the *s*, *esem* became *essem*, and *isem* in compounds *issem;* hence *cecin-issem*.

But the great difficulty to be removed is found in the endings of the Perfect, *i*, *isti*, *it*, *imus*, *istis*, *erunt* or *ere*. These endings present peculiarities which have never been explained. Bopp's labored effort to bring the Latin Perfect into some sort of harmony with Sanskrit aorist forms has proved a complete failure. Schleicher's attempted explanation is admitted by the learned author himself to be incomplete, and is in the main rejected by Corssen, while the views expressed by Corssen himself upon the general subject of the formation of the Latin Perfect fall far short of meeting the real difficulty.

It is evident that the problem before us can be solved only by some new method; and numerous facts in the language suggest the inquiry whether some different

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treatment of the auxiliaries, *esi* and *fui*, which are used in the formation of Perfects in *ui*, *vi*, and *si*, may not give us the key to the true explanation of these remarkable forms. No one has ever traced *esi* back to its original form. It corresponds to the Sanskrit *āsa*, but *āsa* itself is not an original formation, but has been contracted from *asasa* or *asasma*. After the analogy of the original Sanskrit, the corresponding Latin stem *es*, seen in *sum*, *esse*, would give *esismi* inflected thus:

esismi	=	esimi	=	esi.
esisti	=			esisti.
esisti	=	esist	=	esit.
esismus	=			esimus.
esistis	=			esistis.
esisunt	=	esirunt	=	eserunt.

The various changes by which *esismi*, *esisti*, etc., become *esi*, *esisti*, etc., are readily explained. The auxiliary thus assumes the exact form in which it appears in Perfects in *si* and *xi*, as *carp-esi*, *carpsi*, *carpsisti*, *carpsit*, etc.

The same treatment of *fui* from *fuismi*, compounded of *fu* and *es* gives the exact endings of Perfects in *ui* and *vi*, as *alui*, *amavi*, etc.

The discussion leads to the following conclusions:

1. The tense sign of the Latin Perfect in all verbs is the reduplication or its equivalent. In compound forms in *ui*, *vi*, and *si*, it is seen in the auxiliary, which is formed either by reduplicating the stem *es* or by combining it with its equivalent *fu*.

2. The peculiarities of the Latin Perfect—the final long *i*, *s* in the first syllable of *isti*, *istis*, and finally the endings *erunt* and *ere*—are the direct result of the reduplication of *es* or of its combination with *fu*. These peculiarities are readily explained without doing violence to any known law of the language, and without requiring the insertion of a single letter, even of a connecting vowel. Moreover not a single element in any of these forms sustains any important loss.

The second paper of the morning was read by Professor Gustavus Fischer, of Rutgers College, New Brunswick, N. J., on "The Present Condition of Latin Grammar."

The science of Latin grammar has not kept pace in our day with other sciences. In almost every part of syntax, the present condition of grammatical science is exceedingly defective. The grammars leave us without an answer just when they ought to answer; they often answer just when it is not worth while to ask a question. The time has come when we should apply the microscope to the study of language. True philology is one of the natural sciences, and accurate and minute observation is no less necessary in it than in any other of them. Philology, indeed, deals with the mind; we may call it a physiology, but at the same time a history of the mind. We have already begun to apply this microscopic investigation to the origin of words; it remains now to apply it to Latin syntax in the same manner as many members of this Association have successfully applied it to some parts of Greek grammar. Such a treatment of Latin grammar would be essentially historical, carefully separating the different epochs, and always beginning with the oldest writers in which a given syntactical form occurs.

One of the examples adduced was the use of the subjunctive with *sunt qui*, *est qui*, etc. (for instance, "sunt qui dicant," "there are persons who say"), in classi-

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cal prose. There is no Aryan language, except the Latin, in which such a subjunctive occurs. Some grammarians are altogether silent on the reasons for the use of this subjunctive. Others explain *sunt qui dicant* by *sunt homines tales ut dicant*. But this is evidently erroneous. For, aside from the fact that this construction is frequently used when definite and particular statements without any reference to "kind" are assigned to persons, such modal *ut*-clauses never occur in this connection, and hence the clauses with *qui* could not possibly be *substitutes* for modal *ut*-clauses. Haase considers this subjunctive a *linguistic necessity*, because, he says, the predication is contained in the principal sentence, and hence the use of another indicative for the same predication in the relative clause would be a linguistic pleonasm. This peculiar idiom can only be explained *historically*. Happily we have the first beginning of this usage before our eyes. We find that neither Plautus nor Terence ever uses a subjunctive in this construction, although the construction itself not rarely occurs in these writers, as: "*Sunt quos scio* esse amicos;" "*sunt quorum* ingenia atque animos non *queo* noscere." In Cato and Lucretius the construction does not occur. In Varro it is found six times, and only once with a subjunctive, which is not owing to the *sunt qui*. Varro's contemporary, Cicero, was the first who used *sunt qui* with a subjunctive, and so frequently that it will be difficult to count the passages. While Cicero uses the subjunctive in this construction (say) 200 times, the indicative occurs only in two or three authenticated passages, although if *sunt qui* or *est qui* is qualified by the addition of *multi*, *quidam*, or similar adjuncts, the passages with the indicative are a little more numerous. Caesar and Sallust use the construction a few times, and oftener with the subjunctive than with the indicative. Livy uses the construction oftener than all classical writers together, and always with the *subjunctive*. The poets of the classical period almost always use the *indicative*. The writers of the silver age follow the use of Cicero and Livy, though in Seneca four or five times the indicative occurs. Hence it is evident that the subjunctive in this construction had its origin in the time of Cicero, and was probably introduced by Cicero himself. On the other hand, we find that even in the classical writers the subjunctive is always used if the principal sentence is negative or contingent. But this negative or potential subjunctive has a considerably wider range than with *sunt qui*, although our grammars do not enumerate this class of subjunctives (which I call "*the subjunctive of non-reality*") among the "general" instances of subjunctives.

The subjunctive of non-reality occurs if the principal sentence is negative (and generally also if it is potential or contingent), and if this negative in the principal sentence makes the dependent clause virtually negative, although it has an affirmative form. Even in clauses introduced by the Latin equivalents of "that," the language does not generally use the regular form of an accusative with the infinitive, preferring a clause with *ut*, in order to designate an action as having no reality (while it has an affirmative *form*), since this form alone admits the introduction of a *subjunctive*. It seems evident that the very frequent uses of subjunctives of non-reality in the construction *sunt qui*, etc. (as "nemo est qui dubitet," etc.), caused the use of a subjunctive in the relative clause even when the principal sentence was not negative. Hence we must consider this subjunctive as resting upon a mere conventional usage, and as having arisen from a false analogy of those constructions in which the subjunctive expresses the idea of non-reality.

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Mr. C. D. Morris, of Peekskill, N. Y., read the next paper, on "The Age of Xenophon at the Time of the Anabasis."

The object of the paper was to show that there are many improbabilities attending the supposition that Xenophon was born B. C. 444, and was consequently forty-three years old at the time of the Anabasis, which has been taken for established since the publication of K. W. Krüger's tract in 1822; and that therefore we must discredit the story, on which alone that supposition rests, that the life of Xenophon was saved by Socrates at the battle of Delium, B. C. 424. This story is found only in Strabo (cir. B. C. 10) and in Diogenes Laërtius (cir. A. D. 200), and it is, therefore, a legitimate object of criticism. It was judged to be antecedently incredible (1) as being inconsistent with the narrative of Plutarch in his life of Alcibiades; (2) because, if Xenophon was of military age at the battle of Delium, it is hardly possible that he, with all his practical efficiency, should have had nothing to do with the subsequent events of the Peloponnesian war; (3) on the ground that, if Xenophon owed his life to Socrates, he would surely have alluded to the fact, if not in his other writings, certainly in the Memorabilia; (4) because he had at least four of his works in hand considerably after the battle of Mantinea, B. C. 362, at which time he must have been over eighty-two years old. But the strongest reason for discrediting the story is the impossibility of giving a natural interpretation to several passages in the Anabasis except on the hypothesis that Xenophon was quite a young man at the time, probably not over twenty-five years old. When we remember that Proxenus was only thirty at the time of his death, Agias and Socrates about thirty-five, and Menon certainly considerably younger, we must feel that Xenophon, when meditating on the expediency of putting himself forward, could not, if he were over forty, have seemed to himself too young for a general's responsibility, and therefore could not have said to himself (iii. 1, 14), *ποίαν ἡλικίαν ἐμαυτῷ ἐλθεῖν ἀναμένω; οὐ γὰρ ἔγωγ' ἔτι πρεσβύτερος ἔσομαι, ἐὰν τήμερον προδῶ ἐμαυτὸν τοῖς πολεμίοις*: nor could he have said to the captains of Proxenus, who were in the habit of yielding obedience to a man of thirty (iii. 1, 25), *κἀγὼ δέ, εἰ μὲν ὑμεῖς ἐθέλετε ἐξορμᾶν ἐπὶ ταῦτα, ἕπεσθαι ὑμῖν βούλομαι· εἰ δ' ὑμεῖς τάττετέ με ἡγεῖσθαι οὐδὲν προφασίζομαι τὴν ἡλικίαν, ἀλλὰ καὶ ἀκμάζειν ἡγοῦμαι ἐρύκειν ἀπ' ἐμαυτοῦ τὰ κακά*. Similar indications of an age at least under thirty are found in iii. 2, 37; iii. 4, 42; v. 3, 1; vi. 4, 25; vi. 5, 4; and the frequent allusions to others as *πρεσβύτεροι* or *πρεσβύτατοι* are themselves indications of comparative youth on the part of the person who makes them. The only passage in the Anabasis (vii. 2, 38) which has been thought to indicate greater maturity, viz., that in which Seuthes proposes to buy Xenophon's daughter, if he had any (*εἴ τις σοὶ ἔστι θυγάτηρ*), is of no weight, as we know nothing of Xenophon's looks; and probably Seuthes may have made this offer, as he did all the rest of his offers, without any thought of the probability of his fulfilling it. In conclusion, it was insisted, after Grote, that the objection to reposing confidence in one so young as Xenophon was, which would naturally present itself to the soldiers, would be readily lost sight of in view of the remarkable capacity he exhibited to think, speak, and act with equal efficiency, which was the result of his Athenian training.

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Professor W. D. Whitney, of Yale College, New Haven, Conn., read a paper on "The Relation of Vowels and Consonants, and certain Inferences from it."

The special characteristic of human speech is, that it is *articulate*. This means in reality what is literally expressed by the name. Our speech is broken into *articuli*, or joints, and is thus made both intelligible and flexible; and the joints are the syllables. A language of mere tone-sounds, shading and varying into one another without marked divisions, would be a sing-song; a language of mutes and fricatives, of explosions and buzzes, would be a splutter: both alike would be wanting in the availability for abundant and distinct expression which belong to our present utterance. The articulated or syllabic effect is capable of being given in various ways: least perfectly, by mere change from one vowel to another; distinctly enough, by a hiatus between vowels, or repetitions of the same vowel; but most effectively, and in the practical use of speech prevailingly, by the intervention of closer sounds, or consonants, between the opener sounds, or vowels. For example, *a* may be prolonged indefinitely as only one syllable; but divide its continuity with a consonant, as in *apa*, *ala*, and the effect is dissyllabic.

This brings to light the essential distinction of vowel and consonant: the one is an opener sound, with the element of tone or material prevalent; the other is a closer sound, with the element of oral modification, or of form, prevalent. All the current definitions of the two classes, so far as they are true and tenable, are founded upon and imply this. If, in the light of this description, all vowels were equally vocalic, and all consonants equally consonantal, there would be reason for treating the two classes separately, as independent systems. But this is not the case. There are series leading, by successive degrees of the same oral modification, clear through the alphabet, from the openest vowel to the closest consonant: such, for instance, is *a, æ, e, i, y, gh-kh, g-k.**

Along these series, the two classes shade into one another, with a class of sounds near the division-line—especially *l, r, n*—which are capable of serving either office. And so the closest vowels, *ĭ* (*pique*) and *ŭ* (*rule*), are capable of passing, with no difference of articulate form, but only of quantity and stress, into the consonants (semivowels) *y* and *w*. The openest vowels are vowels only; the closest consonants are consonants only; but there is an intermediate domain, of doubtful and changeable character. Thus, in *lap* we have a central openest sound, to which the less open *l* and the yet closer *p* are felt only as accessories; in *alp* we have a transition from openest to closest through an intermediate degree, in *pla* the contrary, and it is still a single syllable; but arrange the same sounds in the order *apl* (i. e. *apple*), and the word is dissyllabic, because there are two sounds of sufficient openness separated by a closer.

The principles of syllabication may be graphically illustrated (as was done by the speaker, upon the blackboard), by representing the stream of opener vocalic utterance, with the constrictions and separations (effected by fricatives and mutes, etc.) dividing it into parts or joints.

The truest and best physical scheme of the alphabet is one which illustrates this relation of vowel and consonant by arranging all sounds between the openest of them all, the *a* of *far*, and the three closest, the mutes *k, t, p*, in classes accord-

* The vowel-signs are used as in the author's previous paper (above, page 16), and *gh-kh* represent the fricatives lying nearest to *g-k*, or the German *ch*-sound and its corresponding sonant.

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ing to their degree of closeness or openness of the articulating organs, and in lines (approximately) according to the organs used in forming them; or somewhat as follows:

sonant.		*a*		vowels.
		æ *A*		
		e *o*		
		i *ə* *u*		
	y	*r*, *l*	*w*	semivowels.
	ng	*n*	*m*	nasals.
surd.	*h*			aspiration.
sonant.	*zh*	*z*		sibilants.
surd.	*sh*	*s*		
sonant.		*dh*	*v*	spirants.
surd.		*th*	*f*	
sonant.	*g*	*d*	*b*	mutes.
surd.	*k*	*t*	*p*	
	palatal series.	lingual series.	labial series.	

In this scheme, the nasals are put next the semivowels, because, though in one sense contact-letters, mutes, they are in another respect a class of sounds in a high degree open, sonorous, and continuable; and because they share with the vowels and semivowels the possession of a common surd, the "aspiration" *h*, which accordingly finds its proper place as such.

This arrangement is of value also as casting light upon the historical development of the alphabet. In the earliest Indo-European language, the greatly predominant sounds were the extreme ones, *a* and the mutes; and the alphabet has ever since been filling up more and more with intermediate articulations. Of the fricatives (sibilants and spirants together) only the *s* is a primitive Indo-European letter. The same is true of the vowel-system; its extremes, the *a*, *i*, and *u*, are alone original. This filling up is not because the intermediate sounds are, in themselves and absolutely, easier of utterance; they are rather the contrary; they are harder for the child to learn to produce, and less frequently met with in the sum of human speech. But in the rapid transitions of fluent utterance, from vowel to consonant and consonant to vowel, there is less expenditure of force in passing back and forth between sounds of medial character; the organs find this art (unconsciously, of course) by experience, and alter the sounds of extreme into those of medial closeness. Hence there is a constant general movement from the two ends of the alphabet toward its middle, an assimilation, as it were, of the two great classes to one another: the vowels become closer or more consonantal; the consonants become opener or more vocalic. The articulated emission of sound assumes a different character: its general breadth and fullness (as depending on the vowels) are reduced or contracted; and the articulating elements, the consonants that break it into joints, are of less incisive character and of inferior dividing effect. This thinning process has gone a great way in English. The facts most strikingly illustrating it are that the open *a* of *far*, which once formed full 30 per cent. of Indo-European utterance, has sunk with us to a half of one per cent., while the two close vowels *i* and *ə* (the neutral sound in *but* and *burn*)

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make over 16 per cent.; and the fricatives have become more numerous than the mutes. This is, in its way and degree, a degeneration of the phonetic form of language; we may hope that it will not go enough farther to degrade seriously the character of our speech.

A recess was taken until afternoon.

AFTERNOON SESSION.

The Secretary reported the election of new members :

Mr. John C. Bull, American Asylum, Hartford, Conn.; Dr. D. J. Pratt, Assistant Secretary of the Board of Regents, Albany, N. Y.; Mr. J. W. Schermerhorn, New York.

Professor C. H. Brigham, of Ann Arbor, Mich., exhibited a Siamese manuscript.

This manuscript is on black pasteboard, twenty feet long and thirteen inches broad, with writing on both sides. The letters, one-third of an inch long, are painted in yellow color. The words read from left to right. The lines are divided, and judging by the similarity of sound in the endings, there is rhyme as well as poetry in them. The subjects on the opposite sides of the manuscript seem to be different. A reasonable conjecture is that it contains two Siamese poems. The manuscript was brought from the East Indies many years ago by a gentleman since deceased, who gave no information how or when he obtained it.

Professor J. M. Van Benschoten, of Wesleyan University, Middletown, Conn., read a paper on "Troy and Dr. Schliemann's Discoveries."

The paper was illustrated by diagrams and a large collection of photographs, and was based in part on the author's own investigations as to the geography of Ilium and the work which has just been carried on there. Dr. Schliemann's labors were carefully described, and his wife's assistance in them was commended. Part of the paper was devoted to an examination of the geographical knowledge of Homer. The general results were summed up somewhat as follows :

What has Schliemann discovered ? Manifestly a city of very ancient date. Whether it be Troy or not is another question, the answer to which awaits further exploration and discovery immediately at Hissalik and the Greek camp at Mycenae and Argos and other countries of ancient civilization. Of the existence of an actual Troy there can hardly be a question any longer. Egyptologists have established beyond a reasonable doubt what concurrent tradition had long tried to settle. As to the age of these ruins of Hissalik there is and will be diversity of opinion. It will require more years to capture this question than Agamemnon spent in taking Troy. History never had such a problem to solve before ; accepted theories of chronological sequence have broken down. A very few facts sum up ancient history. Save what concerns the Egyptians and the Hebrews we know next to nothing of the ancient world. We amuse ourselves with the terms pre-historic, pre-hellenic, etc., terms as vague as anything can well be. Schliemann's stone stratum succeeds his bronze stratum. I think it reasonable to conclude that the stone and the bronze age are not necessarily a mark of

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great antiquity, neither is the order of superposition a law. The same line of statement may with some limitation be made with regard to pottery. It is a common opinion that rude pottery, rude in texture and execution, is a certain index of a rude civilization. Not so. In historical periods undoubtedly there are certain well-settled marks of age and nationality. As to the Hissalik pottery, to much of it a high antiquity may perhaps reasonably be assigned. The rude grafiti or scrawls on Schliemann's terracottas, at one time so unpromising, are just now attracting the profoundest interest. As to his γλαυκῶπις Ἀθήνη, when he shall have made good his promise—or threat—to dig out at Mycenae a βοῶπις Ἀθήνη, we Greek schoolmasters will review and revise our Homer and read "owl-eyed Athena." This indicates Schliemann's weakness. He is so exacting that the most insignificant object, be it what it may, which his spade throws out of the hill of Hissalik *must* be connected with some Homeric name, and he is so credulous that he *believes* it to be thus associated. A battered helmet must be the helmet of Ajax ; a shivered lance must be the lance of Achilles, and so on. But in spite of defects in Schliemann's education and in spite of his over-great enthusiasm verging on insanity, he has done the world an incalculable service. Excavations on ancient sites are to be the order of the day for the next decade.

Dr. Robert P. Keep, of Hartford, Conn., read a paper on "Mr. Isaac Taylor's 'Etruscan Researches.'"

The chief source of information respecting the language of the Etruscans, is the inscriptions, which, in number not less than three thousand, have been discovered in different parts of Etruria. The character in which they are written offers little difficulty, resembling clearly as it does the character common to ancient Greek and Latin records. These inscriptions are found upon a closer examination to be exceedingly disappointing. Only seventeen of the whole number are bilingual, and of the rest many are mere mortuary records of the briefest form, while it often happens that one is but the repetition of another. Of a literature we can not seriously speak. We have only a collection of fragments, a few scattered words. The importance of the interpretation of these, however, is apparent when we consider the intimate relations which existed for several centuries between Etruria and Rome. How much indeed of what we call the essential character of Roman civilization was due to or directly borrowed from the Etruscans, how far the Roman mythology, where it differs from the Greek, may be Etruscan, we shall only know when we shall have discovered the linguistic affinities of the Etruscan language.

The latest attempt in this direction is that of the Rev. Isaac Taylor, in his book published last winter in London, and not yet reprinted in this country, entitled "Etruscan Researches." He maintains that the Etruscans are of Scythian or Turanian origin. The *presumption* in favor of this theory follows from a consideration of their architecture, their religious belief, their social customs, their artistic capacity, and their mental and physical constitution ; and the *confirmation* is sought in a comparison of the remnants of their language with the vocabularies of different people of the so called Turanian family. It is not, however, too much to say that the presumption after the perusal of the first or general part of Mr. Taylor's book, where he discusses the question on ethnological grounds, remains *against* the theory. We pass to what Mr. Taylor considers

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the more important division of his work, the attempt to identify and interpret Etruscan by the aid of Ugric words.

In the Museum at Palermo there is an Etruscan sarcophagus with a relief in the Greek style upon its face, representing the parting scene between a husband and his wife. On either side of a door which represents the entrance to the lower world, stand two winged genii and under them are written the words KULMU and VANTH. The meaning of "death angel," or "destroying angel" seems clear enough for the two words. Now in the Finnic Epic Poem, the "Kalevala," *Kalma* means "ruler of the grave;" in modern Finnic, *Kalma* is "the smell of a corpse"; in Samojed, *Kolmi* is "spirit of the dead"; in Lapp, *Kalmi* is "the grave"; *i. e.*, these different words in various Ugric dialects show a correspondence to each other in form and meaning, and KULMU resembles them in form. For VANTH, Mr. Taylor gives us Turkish *fena*, "annihilation" and Finnic *wana* "old." To show how easy it is to give from Latin and Greek examples of correspondence both in form and probable meaning to a large part of the Etruscan words which Mr. Taylor brings forward, suppose we suggest the great root φαν as we see it in derived words, such as φάντασμα, ἱεροφάντης. I will here and occasionally in other cases suggest such analogies. My object is rather to show that Mr. Taylor's method yields no trustworthy results than to claim for my own examples identity with the words which have suggested them.

A fresco on the walls of a tomb at Volsci represents the immolation of Trojan prisoners by Achilles. Over the head of the figure which witnesses the sacrifice is written HINTHIAL PATRUKLES, which seems to mean "Shade of Patroclus." We have also a mirror, upon which is portrayed the visit of Ulysses to the lower world. He is accompanied by TURMS AITAS, "Hermes of Hades" and near him stands a drooping corpse-like figure HINTHIAL TERESIAS, "the shade of Teresias." Now Tungusic *Han* means "idol." For the meaning of AL we are referred to the mirror where one of the Trojans awaiting immolation is labelled TRUIALS. S is considered to be demonstrative, and AL to be a sign of descent. Trui-al-s then means "this the son of Troy." Of the word HINTHIAL, we understand now the first and last syllables. There remains the middle syllable THI which Mr. Taylor thinks signifies "grave," and he explains the whole word, taking the elements in no regular order, but in the order 1-3-2, "the image of the child of the grave." Would a connection with the root ιδ as modified in εἴδωλον, ἰνδάλλομαι, Odyssey III. 346, not be less far fetched, and absurd? TH represents with tolerable regularity in Etruscan words, a Greek δ; e. g. UTHUZE—Ὀδυσσείς.

After showing the unsatisfactory treatment by Mr. Taylor of several other words, the author of the paper called attention to his interpretation of the syllables found on the so called "dice," discovered at Toscanella, in 1848. Mr. Taylor stakes his case upon his success in identifying these syllables with Ugric numerals. The following table will show what the analogies are upon which he so confidently rests:

for MACH, Turkish *bar-mach*, "finger,"=1; KI, Finnic *kez, kezi*, "hand,"=2; ZAL, Finnic *jalka*, "hand,"=3; SA [Total disagreement between the Ugric dialects in designating four, which Mr. T. believes to be the meaning of SA—]=4; THU, Yenisseic *ton*, "hand,"=5; HUTH, Samojedic *much-tun*, much = mach = 1; tun = 5, *much-tun* is to be regarded as suffering contraction into HUTH,=6.

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The following was the parallel, made in 1848, in the German Institute, between these Etruscan syllables and the Greek and Latin numerals:

MACH, *μία*; THU, *δύο*; ZAL, *τρεῖς*; HUTH, quatuor; KI, quintus; SA, sex.

Since Mr. Taylor's book deals with languages which few understand, it must be judged according to the merits or defects of its method. This test it can not bear. Its author lacks discrimination as well as the special knowledge which such an investigation as he has undertaken presupposes. The first facts of the theory are left unproved. The agglutinating character of the Etruscan language is not made out. The chief service which the book will render will be in calling anew the attention of scholars to an important problem, and in furnishing to the general reader a convenient manual of information about the Etruscans.

Dr. J. Hammond Trumbull, of Hartford, Conn., presented a paper on "Names for Heart, Liver, and Lungs."

Three or four Indian tribes living west of the Mississippi were designated by the Algonkins as *Panis*. This name (now commonly written *Pawnees*) did not belong to the language of those who bore it, but was an appellation contemptuously given by Algonkins to servants and inferiors. It denotes, primarily, the Lungs or Lights, of man or beast. A simpleton, coward, slave, or generally an inferior being was characterized as *lung-y* or 'all lungs'. A similar figure of speech is found in other American languages. In the Dakota, *cha'ghu* is 'lungs', *chaghu-ka* 'a fool'. In the Arapoho, *ikun'a* 'lungs', *kuna-nit'ut* 'cowardly, easily scared'. Nor is the figure exclusively American. In the Lapp, we find *keppa* 'lung', *keppes* 'poor, mean': and in the African Mpongwe, *ibobo* means both 'lung' and 'coward'. The association of ideas of weakness and inferiority with the lungs, seems to have originated in contrasting these organs with the liver. The liver is heavy, compact, of dark color; the lungs light, spongy, pale: the liver was esteemed good for food; the 'lights' were of little value. With the one, came to be associated ideas of strength, constancy, activity, courage; while the other became the type of weakness, levity, inactivity, cowardice. The liver was regarded as the seat of the desires and passions by which men come to mastery; the lungs, as the mere *servants* of the body, kept at unceasing work day and night. The quality which in most European languages has given names to the lungs is their *lightness*. The English 'lights' and 'lungs' are etymologically identical, both being represented in the Skr. *laghu*, which has the meanings of 'feeble', 'mean', 'insignificant', as well as of 'light' (*levis*). In Polynesian languages, Tonga *mama* means 'light' and 'lungs'; Hawaiian *akemama* 'lungs' is literally 'light liver' (Germ. *die leichte Leber*). The Eskimo *puak* 'lung' is related to *puïok* 'to float on water'; and the Mohawk *ostiesera* 'lungs', to *ostosera* 'feathers', etc. The association of ideas by which 'light' takes the meanings 'slight', 'weak', 'inconstant', etc., is obvious. Less clear, at first sight, is the connection between 'lightness' and 'slowness'. We may trace it in Indo-European derivatives from the root of Skr. *laghu* and *langh*, including Irish *lag*, and English 'lag' and 'laggard', as well as 'lungs' and 'lights'. The old naturalists taught that "the smaller the lungs are in proportion to the body, the greater is the swiftness of the animal" (Plin., *Hist. Nat.*, xi. 72).

The Liver has very generally been regarded as the seat of the passions and the animal nature of man. Traces of this belief may be found in many widely-sepa-

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rated languages. The Orientals ascribed to the liver the principal agency in making the blood, and hence, perhaps, it became to them, in some sense, sacred; for "the life of the flesh is in the blood". With the Hebrews, it was 'the most precious', man's 'honor' and 'glory'. Names of the *gall* and of *bile* have generally in European languages been transferred to the evil or ignoble passions. Derivatives from Gr. χόλος, χολή, and Lat. *bilis*, are numerous in modern languages. Lat. *fel*, kindred with *bilis*, received in addition to its secondary meaning, 'poison', that of 'bitter anger' or 'wrath'; A. S. and O. Eng. *fell* was used in the double sense of 'gall' and 'anger', and had its adjectives 'fellish' and 'felly'.

Recognition of the Heart as the life-center and source of vital energy may be found far back in almost every language. To the Semitic and Aryan philosophies, this organ was the seat of mental as well as of physical activity. To it was referred, perhaps by one of the earliest, certainly by one of the most common figures of speech, all that belongs to man's inner life, to "that which perceives, thinks, wills, and desires". In every family of language, we find the name of the physical organ transferred to mental and moral faculties, to the will and the emotions. The Sanskrit *hrid* means 'mind' and 'knowledge' as well as 'heart'; and so, the later derivatives of the same root in the parent speech, Gr. καρδία, Lat. *cord-*, *cor*, Goth. *hairtô*, A. S. *heorte*, etc. In English, we borrow from more than one branch of the great family. From the Latin, through the Norman, we have *core* (the heart as a center) and *courage*. We have *cordial* as well as *hearty*, and once had *cardiac* (heartening, invigorating), now nearly obsolete except among physicians. The old verb 'to hearten' is regaining its place in our language. Other viscera have contributed to our vocabulary by transference of their names to passions and emotions of which they were supposed to be the seats. We retain the adjectives 'choleric', 'spleeny', 'splenetic', 'melancholic', 'hypochondriac', though we no longer locate melancholy in the hypochondria or attribute it solely to excess of 'black bile'.

Professor George F. Comfort, of Syracuse University, Syracuse, N. Y., next presented a paper on "Helveticisms in Schiller's Tell."

No literary production of modern times has been subjected to more searching criticism than Schiller's drama of *William Tell*. In this careful analysis the extraordinary artistic power of the poet has been revealed in nothing more strikingly than the masterly way in which he has given a perfect "local coloring" to the play, weaving in not only allusions to local scenery, customs, and usages, but also introducing local, provincial words, phrases, and expressions, with a skill that is all the more remarkable, since the poet never visited Switzerland. A large number of them are not given in any German-English dictionary, nor are some of them indeed found in even the largest German dictionaries; many of the expressions are not explained even in the dictionaries of the local dialects. Thus, *zu Berg fahren* means "to take a herd of cattle from the wintering place up to the pasture lands on the mountains as they become green through the advancing summer." *Die Alpe* means in Switzerland "a plot of pasture land high up in the mountains." A large number of other words were traced, including some proper names, in which the influence of the neighboring Italian was shown, upon the formation of provincial terms of endearment, as *Seppi* for "Joseph," from *Giuseppe*. Also the remains of old German influences were pointed out, as in

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Kuoni for "Konrad." That Schiller could use these provincialisms so accurately and still so freely and artistically, was owing doubtless to the care with which he studied such works as those of Tschudi, Müller, Schenchzer, Etterlein, and Ebel upon Swiss history, geography, scenery, customs, and usages, and to his long intimacy in Weimar with his Swiss friend, H. Meyer. It is a curious circumstance that these words and expressions in so classical a work as William Tell should not be found in standard German-English dictionaries. And usually the non-German student thinks that he is reading the purest German, in passages which are provincial and poetic, and are recognized to be so by the Germans themselves.

As the Local Committee had arranged for a reception to be given in the evening, the Association adjourned till 9 o'clock to-morrow morning.

FRIDAY, JULY 17TH—MORNING SESSION.

The first paper read was by Professor C. H. Brigham, of Ann Arbor, Mich., on "The Agaou Language."

This is the dialect of the Jews of Abyssinia, known as the Falasha people. These Falashas differ from other Jews in knowing nothing of Hebrew. They are equally ignorant of Greek and of Arabic. They have had no connection with other Jewish tribes, but have been familiar for ages with the dialects of the people among whom they have lived.

The language of the dominant race in Abyssinia in the early time was the Gheez, a Semitic dialect. This language early became detached from the Cushite or Himyarite. It has some resemblance to the Coptic, particularly in the form of the verb. From the 14th century it has ceased to be a spoken language, and only the learned understand it. The nearest to it of the dialects which have sprung from it is the Tigré or Khassi language. The Amharic, the official language of the land, is also spoken by the Falasha Jews, as well as by the Christians, though it is not used in religious exercises, but only in secular affairs.

The Falashinya, or Agaou dialect, which the Falashas speak in their households, has nothing Semitic in its structure. It is the descendant of the dialect spoken by the Abyssinian people before the invasion of the Semitic race from the other side of the Red Sea. This may be shown by the comparison of the Bogos-Bilen table of numbers from 1 to 10, with the Falasha names of numbers. They are nearly identical. So the common names of the elements, and of the implements of industry and domestic life, have close resemblance in sound to the ancient Bogos speech.

The Grammar of the Falasha language has several peculiarities. It has no article. The feminine gender is marked by adding *ti* or *eti* to the masculine. The plural is formed in five ways: by adding the word *ki*, which means all, as *yir*, "man," *yirki*, "men";—by doubling the word; by changing the final *a* into *t*; by changing an inner letter, as *khoura*, "child," plural *khorla*, "children"; by adding *in*, to express decimal numerals, as *lina*, "two," *linin*, "twenty." The adjective always comes before the substantive. There are three oblique cases, genitive, dative, and accusative. The personal pronouns are sometimes independent, sometimes prefixed to the word to which they belong. There is only one conjugation for all verbs. The participle is shown by the termination *aŋ*; and

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the personal pronoun before the participle implies combined action. The imperative has a double form, affirmative and negative. When two verbs are joined, the first indicates the manner of the action. There are various other ways of verbal modifications. Illustrations of all these positions were given.

The Agaou language belongs to the great family which includes the Egyptian, Berber, Haoussa, the class of tongues sometimes called "Hamitic." It is notable for the abundance of its nasal tones, for the confusion of its liquids, for its contraction of words, and for the change of gutturals into nasals. Its literature is not abundant, consisting mainly of prayers and translations of Scripture.

Professor W. D. Whitney, of Yale College, New Haven, Conn., read the next paper, on "Φύσει or Θέσει?"

The ancient Greeks disputed whether the names of things existed φύσει, "by nature," or θέσει, "by assignment," i. e. by human attribution—whether they were natural or conventional. The same question is sometimes raised and answered anew at the present time; and the answer is apt to be, φύσει: perhaps especially on the part of those who affect a philosophic profundity in their treatment of the subject. But if there is truth in that answer, it is very far from being the whole truth. On the contrary, in the most direct and obvious sense, names are certainly θέσει. That is to say, the words of all existing languages exist and are used only by convention; they were learned by those who use them; their variety, in relation to any given idea, is as great as that of human languages; they are kept in existence by tradition. There is not a known name in any dialect that has an internal necessary significance, or other than a historical *raison d'être:* even the most obvious onomatopœias are only examples of how human usage has chosen one mode of suggestion rather than another in forming its names: each idea so indicated is in other dialects found expressed by words which possess no such suggestiveness. This is true not only of all existing, but of all recorded speech, and of all that is inferable for pre-historic epochs, or restorable by scientific processes. It only remains disputable whether the very earliest stage of expression, the germ of the after conventional growth, was natural and necessary. Upon this point, opinions may and probably will long remain at variance. The speaker believed, however, that here also the only true and tenable answer is θέσει. And this in part because he held that the impulse to communication was the final and direct producer of speech; that there would have been no speech without it. It is not, of course, the whole force, or the grandest of the forces, that combine to the existence of speech. If a stone lie supported at the edge of a precipice, it may continue there for ages without stirring; all the vast cosmical forces of gravity will have no power to set it in motion; but a slight thrust sideways, from some accidental and transient cause, topples it over, and it goes crashing down. Is it the thrust, or gravity, that produces the fall? Either, or both. There would have been no fall without gravity; but gravity would never have resulted in the fall without the thrust. So all the noble endowments of man's nature would never have brought him to language without the added impulse to communication which comes from his social disposition. And names are given to things by him for the satisfaction of this impulse, being made such as conduce to intelligibility; though language as a whole becomes a worthy exponent and instrument of his best powers.

Words, then, in their individuality, exist θέσει, and only θέσει: but the θέσις itself is φύσει, if we may include in φύσις not only man's natural gifts but also his

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natural circumstances. In this sense only, and with these limitations, is it proper to answer φύσει to the question as to the existence of speech.

Mr. John Swinton, of New York, presented a paper on "Linguistic Perspective."

It related to the elements, forces, and scope of the English language. The author showed by statistics that if it continued for another century at the ratio of the growth of the past century, it would then be spoken by as many people as now inhabit the globe. He showed that it was spoken by more people than any other European language; and that it was the only language that was spoken by two great powers (England and the United States). He indulged in a series of speculations concerning his theory, showing how the dominating English dialect was absorbing all local dialects, and discussing other questions of interest.

The Committee to nominate officers for the following year made nominations as follow:

For *President*—Dr. J. Hammond Trumbull, Hartford, Conn.

For *Vice-Presidents*—Professor S. S. Haldeman, University of Pennsylvania, Columbia, Penn., Professor Charles Short, Columbia College, New York.

For *Secretary and Curator*—Professor Samuel Hart, Trinity College, Hartford, Conn.

For *Treasurer*—Professor Albert Harkness, Brown University, Providence, R. I.

For additional members of the *Executive Committee*—

Professor Fisk P. Brewer, University of South Carolina, Columbia, S. C.

Professor Martin L. D'Ooge, University of Michigan, Ann Arbor, Mich.

Professor Edwin S. Joynes, Washington and Lee University, Lexington, Va.

Professor Lewis R. Packard, Yale College, New Haven, Conn.

Professor Edward H. Twining, University of Missouri, Columbia, Mo.

The report was accepted, and the persons therein named were declared elected to the offices to which they were respectively nominated.

The Committee to select the place and the time of the next meeting recommended that the meeting be held at Newport, R. I., on the 13th day of July, 1875, at 3 o'clock P. M.

The report was accepted, and the recommendation of the Committee was adopted.

The Executive Committee were desired to take into consideration the question of holding winter sessions of the Association at places in the southern portion of the United States.

On motion, it was

Resolved, That the members of the Philological Association gratefully acknowledge the kindness and hospitality of the citizens of Hartford, so generously tendered at an inconvenient season; the attentions of the efficient Local Committee; the courtesy of the High School Committee, in giving the free use of their commodious building for the sessions of the Association; and the considerate favor of the railway companies in the return tickets given to the members of the Association.

The minutes of the meeting having been read and approved,

On motion, the Association adjourned.

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1874–5.

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EXECUTIVE COMMITTEE.

The officers above named, and—

FISK P. BREWER
MARTIN L. D'OOGE,
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LEWIS R. PACKARD,
EDWARD H. TWINING.

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Alvah Hovey, Theological Seminary, Newton, Mass.
Selah Howell, Christian Biblical Institute, Stanfordville, N. Y.

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Edward S. Joynes, Washington and Lee University, Lexington, Va.
Asahel C. Kendrick, University of Rochester, Rochester, N. Y.
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Charles M. Mead, Andover Theological Seminary, Andover, Mass.
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Charles D. Morris, Lake Mohegan, Peekskill, N. Y.
F. A. Muhlenberg, Muhlenberg College, Allentown, Pa.
James E. Munson, 34 Park Row, New York.
Joseph H. Myers, Milton, N. Y.
Bennett H. Nash, 62 Boylston street, Boston, Mass.
Francis Philip Nash, Hobart College, Geneva, N. Y.
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Sydney P. Pratt, 7 Pemberton Square, Boston, Mass.
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Joseph Thomas, 116 North Eleventh street, Philadelphia, Pa.
William Thompson, Theol. Institute of Connecticut, Hartford, Ct.
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TRANSACTIONS

OF THE

AMERICAN

PHILOLOGICAL ASSOCIATION.

1875.

PUBLISHED BY THE ASSOCIATION.
PRINTED BY THE CASE, LOCKWOOD & BRAINARD CO.,
HARTFORD.
1876.

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PROCEEDINGS:—Seventh Annual Session, Newport, 1875.

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TRANSACTIONS

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AMERICAN PHILOLOGICAL ASSOCIATION.

1875.

I.—*On the Formation of the Tenses for Completed Action in the Latin Finite Verb.—Second Paper.*

BY ALBERT HARKNESS,

PROFESSOR OF THE GREEK LANGUAGE AND LITERATURE IN BROWN UNIVERSITY.

IN a paper read before this Association at its last annual session, I attempted to discuss the difficult question of the origin and formation of the Latin perfect in *si*. The examination then made, aided by such light as could be gathered from Comparative Philology, seemed to warrant the conclusion that in this class of verbs the peculiar endings of the Latin perfect, as seen in *i*, *isti*, *it*, *imus*, *istis*, *erunt* or *ere*, may be directly derived from the reduplicated stem *esis* of the root *es*, from the original form *asasma*. Moreover, the change from *esismi*, *esisti*, etc., to the classical form *esi*, *esisti*, etc., was found to be quite inconsiderable, and the process by which it was effected to be at once simple and natural.

In the present paper I propose to examine perfects in *ui*, *vi*, and *i*, including of course the auxiliary *fui*. The discussion of this subject will involve a somewhat careful examination of the entire tense-formation of the Latin finite verb.

As an illustration of one of the primitive verbs of the language, we may take *cano*, from the Indo-European root *kan*. The original root remains unchanged in the present. The perfect is reduplicated, and in this particular is one of the few

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Latin perfects which conform to the original type of the Indo-European; yet even this verb, with all its primitive features, differs widely in its tense-formations from that system of verbal inflections which the Latin, the Greek, and the Sanskrit must alike have inherited from the original mother-tongue of the family. Notice for a moment its tense-forms: *cano*, *canebam*, *canam*, *cecini*, *cecineram*, *cecinero*, *canam*, *canerem*, *cecinerim*, *cecinissem*. With the exception of *cano* and *canam*, which are in their origin present formations, and of *cecini*, which we are now discussing, the obvious and distinguishing characteristic of this entire group of forms is that they are all compounds of the auxiliary, as seen in *sum* and *fui*. In making this statement, however, I assume the correctness of the generally received opinion in regard to the formation of compound tenses by means of auxiliary verbs—a point which was, I think, sufficiently discussed in my former paper. Thus, *bam* in *cane-bam* is the imperfect of *bhu* (=*fu*), as *eram* is the imperfect of *es*. In the form in which they came from the mother-tongue of the Indo-European family, both *bam* and *eram* undoubtedly had the augment, though no trace of it now remains in either, unless it lies concealed in the long *ē* in *canēbam*. *Eram* and *ero* in *cecin-eram* and *cecin-ero* are at once recognized as the imperfect and the future of the auxiliary *sum*. *Can-erem* is a compound of *esem*, the original form of *essem*; *cecin-erim* of *erim* for *esim*, the full form for *sim*, with *s* changed into *r* between two vowels. In like manner *cecin-issem* is a compound of *essem*.

It is scarcely necessary to explain in passing, how *esem*, the early form of the imperfect subjunctive of *sum*, can appear as *erem* in *can-erem* and as *issem* in *cecin-issem*. It is obvious that *esem* would regularly become *isem* in compounds, and then that *isem* would either become *erem* or *issem*, as it is a law of the language that *s* between two vowels generally passes into *r*, and that *i* before *s* becomes *e* before *r*. But if it be asked why the *s* is thus changed into *r* in *canerem* and yet doubled in *cecinissem*, we need only remark that a variety of treatment in the development of language is by no means uncommon. The treatment of the two letters *e* and *s* in the

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inflection of the verb *sum* furnishes ample illustrations. The *e* of the root is sometimes dropped, as in *sum*, *sumus*, *sim*, *simus*, and sometimes retained, as in *est*, *estis*, *eram*, *ero*. The *s* in this verb has a three-fold treatment: it is retained unchanged in *est*, *estis*, and in *sum*, *sim*, though in the full forms, *esum* and *esim*, this would have been impossible; it is changed into *r* in *eram* and *ero;* and it is doubled in *essem*. These are indeed but illustrations of the remarkable facility with which the languages of the Indo-European family have from the simplest elements produced the most varied forms, especially in their systems of verbal inflections.

The presence of the auxiliary *es* or *fu*, even in the most primitive verbs of the language, in all the tenses for completed action and for past time, unless the perfect is an exception, naturally suggests the inquiry, whether the auxiliary may not exist, though in a somewhat disguised form, even in that tense. Indeed in the subjunctive, the perfect has undoubtedly a compound form. Moreover, everywhere in the Latin verbal inflections, unless the perfect is an exception, simple forms in the indicative correspond to simple forms in the subjunctive, and compound forms in the subjunctive correspond to compound forms in the indicative; *amo*, *amem; rego*, *regam; sum*, *sim; eram*, *essem*—all simple forms; *can-erem*, *cane-bam; cecin-issem*, *cecin-eram*—all compound forms. After this uniform analogy should we not expect that *cecini*, if a simple perfect stem, would form its perfect subjunctive as the present stem *audi* forms its present subjunctive—*audi*, *audiam; cecini*, *ceciniam?* There surely would be no difficulty in the way of such a formation; indeed it would only be in accordance with what we find elsewhere, both in the Latin and in the cognate languages. On the other hand, from the compound *cecin-erim* we naturally infer for the indicative a perfect compounded with *sum*—a correspondence which actually appears in the third person plural, as in *cecin-erint*, a compound of *erint* for *esint*, the full form of *sint*, and *cecin-erunt*, a compound of *erunt* for *esunt*, the full form of *sunt*.

But, turning to the passive voice, we find that all the tenses for completed action are periphrastic forms, consisting of the

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perfect passive participle with the auxiliary *sum*, while all the other tenses are formed directly from the active. Thus all the simple forms of the active, unless the perfect is an exception, correspond to simple forms in the passive, while all the periphrastic forms of the passive correspond to compound forms in the active, unless here again the perfect is an exception. Indeed, in examining the Latin verbal inflections, I have been surprised to find in how very many points the Latin perfects are anomalous upon the supposition that they are simple forms; and I have been scarcely less surprised to notice how completely all these irregularities disappear and how readily all these perfects conform to general laws, as soon as we recognize them as compounds of the auxiliary *sum*. I do not, however, claim that the considerations which I have thus far adduced furnish any positive proof that the auxiliary *sum* is an element in the formation of these perfects; but I do claim that they all point towards such a conclusion, and render it at least not improbable. They suggest the propriety of a critical examination of this formation to see whether traces of the auxiliary may not be discovered in it, while at the same time they anticipate any objections which might otherwise be brought against this view from the Greek and the Sanskrit perfect.

Let us then take the following examples as representatives of the several classes of Latin perfects: *esi*, *carpsi*, *cecini*, *fui*, *alui*, and *amavi*. They are inflected as follows:

1. es-i,	2. carp-s-i,	3. cecin-i,
-isti,	-s-isti,	-isti,
-it,	-s-it,	-it,
-imus,	-s-imus,	-imus,
-istis,	-s-istis,	-istis,
-erunt (*or* -ere).	-s-erunt (*or* -s-ere).	-erunt (*or* -ere).

4. fu-i,	5. al-u-i,	6. ama-v-i,
-isti,	-u-isti,	-v-isti,
-it,	-u-it,	-v-it,
-imus,	-u-imus,	-v-imus,
-istis,	-u-istis,	-v-istis,
-erunt (*or* -ere).	-u-erunt (*or* -u-ere).	-v-erunt (*or* -v-ere).

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The most cursory examination of these forms reveals the fact that the endings, *i*, *isti*, *it*, etc., on the one hand present the most remarkable peculiarities, entirely without a parallel in any other tense in the Latin language, while on the other hand they preserve the most unvarying uniformity throughout all classes of Latin verbs, being precisely the same in the latest derivative as in the earliest primitive. But let us see whether our six examples are really independent forms.

Carp-s-i is simply a compound of *esi*, and its tense-sign is in the auxiliary. In *cecini* and *fui* the tense-sign originally consisted solely in the reduplication, which has been preserved in *cecini*, but lost in *fui*, though traces of it are preserved in the earlier Latin in the form *fuvi*, and in *fūi* with the long *u*. *Al-ui* for *al-fui*, and *ama-vi* for *ama-ui* or *ama-fui*, are both compounds of *fui; f* is dropped, and in *ama-vi* the *u* is changed into its corresponding *v* between two vowels; the tense-sign is in the auxiliary.

We have thus found that three of our six representative examples of Latin perfects are compounds of auxiliaries: *carp-s-i* of *esi*, and *al-ui* and *ama-vi* of *fui*. We may therefore dismiss these for the present from our discussion, as they will all find a complete explanation in the analysis of the auxiliaries of which they are compounded. If therefore we can explain the origin and formation of *esi*, *fui*, and *cecini*, we shall solve in full the problem of the Latin perfect. But the difficulty lies in the peculiar endings of which we have already spoken. Now the fact that such remarkable peculiarities are found with unvarying regularity in every perfect active in the language renders it quite certain that they have a common origin. In the previous paper we discovered that the forms of the Latin *esi* and of the corresponding Sanskrit *āsa* differ so widely from each other that they must have been reached by different methods. The original form from which they were both derived was probably *asasma*, from the root *as*. From this the Sanskrit forms can be reached only by dropping the first *s*, and contracting *aa* into long *a*. In the Latin, on the contrary, this *s* appears to have been retained, but before the classical forms were reached a two-fold change must have taken place.

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I. The original vowel *a* of the root *as* became *e*, giving the root *es*. Moreover, this *e* was weakened to *i* in the second syllable of the reduplicated stem *esis*, a change entirely analogous to that which takes place in *cecini*, from *cano*; the *a* in the personal ending *ma* also became *i*. We thus have the form *esismi*.

II. The full form *esismi* was then gradually shortened. The steps by which this was effected were all explained in my former paper and need not be repeated here. We noticed the disappearance of *s* before *mi* and *mus*, and the dropping of the ending *mi* with the lengthening of the preceding *i* in the first person singular. We observed also the disappearance of *s* before *t* in the third person singular. Some of these changes, natural in themselves, were undoubtedly facilitated by the analogy of the other primitive perfects in which the endings *mi*, *mus*, and *t* were not preceded by *s*. The forms of *esismi*, *esisti*, etc., became *esi*, *esisti*, *esit*, *esimus*, *esistis*, *eserunt*, which are the classical forms of the auxiliary as seen in *carp-si* for *carp-esi*, *carp-sisti*, etc. We thus reached a very simple and natural explanation of the peculiar endings of *esi* and its compounds, i. e., of all perfects in *si* and *xi*.

But how are these endings to be explained in *fui* and *cecini*? They probably have, as I have already remarked, one common origin in all Latin verbs. But what do they really represent in the forms of the auxiliary *esi*? We explained *esi* itself as shortened from *esismi*; the final *i* is therefore the remnant of the simple root *es* with the personal ending *mi*. *Isti* in *esisti* is the root with the personal ending *ti*. In the same manner the endings *it*, *imus*, *istis*, and *erunt*, all consisted originally of the personal endings added to the simple root *es*. But the union of personal endings with the simple root forms the present tense, just as the union of those endings with the reduplicated root forms the perfect.

The facts just mentioned suggest the inquiry whether *fui* and *cecini* may not contain the present of the auxiliary *es*, *sum*; whether *fui*, *fuisti*, etc., may not come from *fuismi*, *fuisti*, etc., as *esi*, *esisti*, etc., from *esismi*, *esisti*, etc., and whether in the same way *cecini*, *cecinisti*, etc., may not come

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from *cecinismi*, *cecinisti*, etc. Indeed, after what has been said, I scarcely see how it is possible to look at such forms as *fu-is-ti*, *fu-is-tis*, *fu-er-unt* (=*fu-is-unt*), and *cecin-is-ti*, *cecin-is-tis*, *cecin-er-unt* (=*cecin-is-unt*), without recognizing the auxiliary *es* as an element in the formation, as it lies there entirely undisguised between the root and the personal endings. *Erunt* (=*isunt*) is for *esunt*, the full form for *sunt*; *istis* is for *estis*, the second person plural of *sum*; and *isti* is for *esti*, the full form for *es*, the second person singular of *sum*.

But to this view a ready objection will be found in the fact that it is not supported by the analogy either of the Sanskrit perfect or of the Greek. This is not, however, a very formidable objection. We have already observed that the forms of the Latin *esi* differ so widely from those of the corresponding Sanskrit *āsa* that they must have been produced by a different treatment. Moreover the Sanskrit, the Greek, and the Latin, all have the root *bhu* (=*fu*) in common. From this root the Sanskrit forms *babhuva*, *babhuvitha*, *babhuva*, etc.; the Greek, πέφυκα, πέφυκας, πέφυκε, etc.; and the Latin, *fui*, *fuisti*, *fuit*, etc. It will require no argument to prove that these three sets of forms are not constructed on the same model. Neither of them preserves the original perfect of this root unchanged, though the Sanskrit undoubtedly comes nearer the original form than either of the other languages. The Greek πέφυκα contains an element, κ, not found in the Sanskrit or in the Latin, while the Latin, on the other hand, shows in *fu-is-ti*, *fu-is-tis*, and *fu-er-unt*, an element *s* or *is* not found in the Sanskrit or the Greek. The absence of the auxiliary, therefore, from the Sanskrit and the Greek perfects no more disproves its existence in *fui* than the absence of κ from the Sanskrit and the Latin disproves the existence of that letter in the Greek πέφυκα. The same remark applies to *cecini* and to all other perfects in *i*.

But what is the import and meaning, it may be asked, of *esmi* (=*sum*) as an element in the formation of *fui*, *cecini*, etc.? It is obviously no part of the tense-sign, as that is preserved in full in *cecini* and belonged originally to *fui*, as is shown by the earlier *fūi* (with long *u*) and *fuvi*. How then did it

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obtain a place in the Latin perfect, and what purpose was it originally intended to serve?

A brief outline of the progressive development of the Indo-European system of verbal inflections will, I trust, throw some light upon this question. Curtius, in the last edition of his able work, "Zür Chronologie der Indo-germanischen Sprachforschung," marks three distinct epochs, or stages, in the history and growth of the system of verbal inflections in the mother-tongue of the Indo-European family, from which the Latin, the Greek, and the Sanskrit alike derived their inheritance of verbal forms.

I. The first stage consisted simply in the union of a verbal root with a pronominal root or stem. Thus from the root *da* was formed *da-ta*, Latin *dat*, 'he gives.' Of course only a few of these elemental forms have come down to our time; but the Sanskrit *as-mi*, the Greek ἐστί, and the Latin *est*, may serve as illustrations.

II. During the second period, verbal roots were developed into stems or themes in various ways, especially by the addition of the determinative *a*. These stems were then inflected like the roots of the first period by the addition of pronominal roots or stems. Thus the root *bhar* became the stem *bhara*, and *bhar-ta* became *bhara-ta*. Subsequently this *a* became in the Greek *o* or ε, as in φέρομεν, φέρετε, and in the Latin *o*, *i*, or *u*, as in *fero*, *ferimus*, *ferunt*.

III. The third period shows us for the first time compounds of the auxiliaries *as* and *ja:* as *a-dik-sam*, which became in the Sanskrit *a-dik-sham*, and in the Greek ἔδειξα; *kama-ja-mi*, which became in the Latin *ama-o*, *amo*.

These three stages in the development of verbal forms were all reached by the mother-tongue before the Latin, the Greek, the Sanskrit, or any other known language of our family had a separate existence. If now we follow out this course one step further, we shall meet in the separate languages various periphrastic forms, as the Sanskrit *ćorojam āsa* or *ćakara*, the the Greek τετελεσμένοι εἰσί, ἔχον ἐστί (= ἔχει), and the Latin *amatum iri*, *amatus sum*.

It will be observed that such compound and periphrastic

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forms as *a-dik-sham*, ἔδειξα, *cecineram*, and *amatus sum*, all contain the copula, whose office is to connect the predicate with the subject. It may not, indeed, be easy to reproduce the original conception embodied in such a compound as *a-dik-sham*, but it may be rendered approximately 'then was I showing.' The copula ('was' in English) has its distinct sign. In the verbal forms of the previous periods the copula was not represented by any separate sign, though the relation of subject and predicate was undoubtedly recognised. Curtius justly remarks that a compound aorist like *a-dik-sham*, ἔδειξα, differs from a simple aorist very much as the Latin *tum dicens erat* differs from *tum dicens*. In other words, the former has an expression for the copula, while the latter has not.

Now tense-forms compounded of the auxiliary *as*, with the force of a copula, are important elements in the verbal systems alike of the Latin, the Greek, and the Sanskrit; but the regularity with which they have supplanted more primitive forms is preëminently marked in the Latin. In that language indeed they are found in every tense except the present.

If now we inquire what tense-forms were developed by the mother-tongue of the Indo-European family, I think that we shall find with Schleicher that even that primitive language probably had four simple tense-forms—a present, an imperfect, a perfect, and an aorist—and two compounded tense-forms—a future and an aorist. Now these forms, simple and compound, must have been the common inheritance of the Latin, the Greek, and the Sanskrit. Moreover, the tendency to form compounds of the auxiliary, as copula, which had already become distinctly marked before either of these languages had a separate existence, was afterwards still further carried out by the Greek and the Latin in their systems of verbal inflections. We must now examine the results of this tendency in the Latin tense-forms.

The Latin inherited a simple present which it retained to the last. It also inherited a simple imperfect, but it proceeded to form a compound of *fu* for the indicative, and of *es* for the subjunctive, as *ama-bam*, *ama-rem*. The simple forms of the imperfect gradually disappeared from the language, except *eram* and *essem* of the auxiliary. It inherited a compound

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future in *so* for *sio*, as is evident from the Sanskrit and the Greek (as *dasjami*, λύσω), but it created another in *bo* for *bio* from *fu*, as *ama-bo*. It also inherited a simple reduplicated perfect; but if the view set forth in this paper is correct, it formed a compound perfect by simply adding to the reduplicated root the present indicative of *es* (*esmi* = *sum*) for the perfect indicative, and the present subjunctive (*esim* = *sim*) for the perfect subjunctive. Thus we have *cecin-ismi*, which became *cecini*, as *esismi* became *esi;* and *cecin-isim*, which became *cecin-erim*, as *esisim* became *eserim*. Thus also we have *fu-ismi*, *fui; fu-isim*, *fu-erim*. In the same manner it formed from the reduplicated root, first a compound pluperfect by appending the imperfect *eram* for the indicative and *essem* for the subjunctive: *cecin-eram*, *cecin-issem; fu-eram*, *fu-issem;* and secondly a compound future perfect by appending the future *ero: cecin-ero*, *fu-ero*. Thus from the reduplicated root, or perfect stem, were formed in the indicative a perfect, a pluperfect, and a future perfect, by appending respectively the present, the imperfect, and the future of the auxiliary *es*, and in the subjunctive a perfect and a pluperfect by appending the present and imperfect subjunctive of the same auxiliary. Thus interpreted, the Latin system of verbal inflections in the tenses for completed action is perfectly symmetrical and consistent.

But it may be claimed that *eram* and *ero* are essential elements in the formation of the pluperfect and the future perfect tenses, while the present of the auxiliary in no way aids in forming the perfect tense, inasmuch as the essential idea, that of completed action, is already expressed by the reduplication. That such an objection is not really valid will, I think, be apparent from the following considerations.

1. A simple pluperfect could have been formed from the perfect stem without the auxiliary, just as the Greek imperfect was actually formed from the present stem, and just as a simple aorist, or pluperfect, was formed from the reduplicated root in the Sanskrit. A future perfect could also have been formed from the perfect stem, just as *ero* was actually formed from *es*, i. e., by simply adding *io*. Here then the auxiliary

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is not at all necessary to the formation of the tense, but is introduced for its own sake.

II. The mother-tongue of the Indo-European family very early formed a simple aorist tense directly from the root, but it subsequently formed a compound aorist by means of the auxiliary. Thus, even in that primitive age of verbal inflections, there existed side by side two forms of the same tense, an earlier form without the auxiliary or copula, and a later form with it. The Greek inherited both of these forms in its two aorists. In the same manner, in my opinion, the Latin, soon after the separation of the different branches of the family, though it already possessed a primitive perfect without the auxiliary, proceeded to form a new one with it. The cases are entirely parallel.

In this statement I of course assume, at variance with the common opinion, that the compound aorist of which I have just spoken contains the *present* and not the *imperfect* of the auxiliary. The idea of past time is expressed by the augment and need not be repeated in the auxiliary. But if this point be questioned, we may easily adduce examples in which the present of the auxiliary actually appears. That the present *sim* is an element in *cecin-erim* and *fu-erim* is a generally admitted fact; and if it be claimed that this aids in forming the mood, the obvious answer is that *sim* is in no sense a mood-sign, but a fully developed auxiliary verb; that in fact the present subjunctive of *sum* is no more necessary in the formation of the perfect subjunctive than its present indicative is in the formation of the perfect indicative. But I need not multiply illustrations or arguments upon this point, as it is generally admitted that the root *es* does appear in the ending *erunt*, for *esunt*, the full form for *sunt*, in the third person plural of the active voice of every perfect tense in the Latin language, whatever its form in other respects: *fu-erunt*, *cecin-erunt*, *dix-erunt*, *amav-erunt*. Moreover, the presence of the auxiliary is almost equally clear in the second person, singular and plural: *fu-isti*, *fu-istis*, *cecin-isti*, *cecin-istis*, *dix-isti*, *dix-istis*.

What then was the probable development of the Latin

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perfect? The language undoubtedly inherited a simple reduplicated perfect, but subsequently formed a compound one, which differed from the simple form precisely as the compound aorist differed from the primitive aorist. Like the primitive perfect, it was reduplicated; but, unlike that, it contained the auxiliary *es*. This became at length the prevailing form. The changes which it subsequently underwent in accordance with a uniform tendency in language to shorten words were precisely the same as those which have been already explained in our treatment of *esi* for *esismi*. Thus were formed *fu-i* (originally reduplicated *fufu-ismi*), *ce-cin-i*, and, in fine, all perfects in *i*. The simple primitive perfect finally disappeared in all Latin verbs, except the auxiliary *esi*, which is preserved only in compounds.

The perfect formed by appending the present of *es* to the perfect stem, must, I think, in its origin have preceded the formation of perfects in *si*, *ui*, and *vi*. At this stage in the development of verbal forms, every Latin perfect probably contained a reduplicated stem and the auxiliary *es*. From this stage the transition was easy and natural to the formation of a perfect from the present or verb-stem through the aid of the perfect of the auxiliary. It is at once apparent that the perfect of the auxiliary added to the verb-stem is entirely equivalent to the present of the auxiliary added to the perfect stem. Thus, for example, in the verb *teneo* a new form *ten-ui*, consisting of the verb-stem *ten-* and the perfect *fui*, became an exact equivalent of the older form *tetini*, consisting of the perfect stem *tetin-* and the present *esmi*. Thus at length there existed side by side two equivalent compound forms, an earlier and a later. In a few verbs both of these forms have been preserved: *tetini*, *tenui*; *pepigi*, *panxi*; *peperci*, *parsi*.

Such, it seems to me, was the origin of perfects in *si*, compounded of *esi*, and perfects in *ui* and *vi*, compounded of *fui*: *carp-si* for *carp-isi*, *dixi* for *dic-isi*; *al-ui* for *al-fui*, *ama-vi* for *ama-fui*. It is, however, often assumed that these compounds were formed to supply the place of a lost reduplication. This assumption I am inclined to regard as erroneous, at least in

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respect to compounds in *si*. All compound perfects indeed grew very naturally out of a tendency already developed in the mother-tongue, a tendency to which the Latin yielded more readily and more completely than the Greek or the Sanskrit; but those in *si*, *ui*, and *vi* became the favorite forms and thus supplanted most of the older reduplicated perfects. This view, I think, best accounts for the disappearance of the reduplication in so large a proportion of Latin verbs; for if the new forms were intended simply to supply the place of a lost reduplication, they would seldom have appeared in verbs which had not already lost it; yet compounds in *si*, *ui*, and *vi* existed even in the classical period side by side with reduplicated forms. Moreover, many archaic forms, as *faxit* (= *fecerit*), *axim* (= *egerim*), *taxis* (= *tetigeris*), *sponsis* (= *sposponderis*), *capsit* (= *ceperit*), show that compounds without reduplication existed long before the classical period in verbs which retained the reduplication or at least some trace of it throughout all periods of Latin literature.

But how were the other tenses for completed action formed? In accordance with the explanation already given of the formation of these tenses in verbs whose perfect ends in *si*, it is only necessary to add that those verbs which form the perfect indicative by adding *fui* to the verb-stem, generally form the pluperfect by adding *fueram*, the future perfect by adding *fuero*, the perfect subjunctive by adding *fuerim*, and the pluperfect by adding *fuissem*.

But a few forms in *asso*, *esso*, and *so*, and a few in *assim*, *essim*, and *sim*, require explanation. These forms are now generally admitted to belong respectively to the future perfect and the perfect subjunctive, notwithstanding Madvig's attempt at a different explanation. With a few exceptions, they are archaic forms, common in Plautus, but rare in the golden age, except in special connections.

I. Those in *so* and *sim* are readily explained: *dixim* = *dic-sisim* for *dic-isisim*; *duxim* = *duc-sisim* for *duc-isisim*; *auxim* = *aug-sisim* for *aug-isisim*. Here we have only the ordinary dropping of *is* before *s*, as in *dixti* = *dixisti*.

II. Those in *asso* and *assim*, which are very numerous, and

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those in *esso* and *essim*, which occur only in a few verbs, are generally explained as follows: *amas-so* from *amaviso* by dropping *i* and assimilating *v*, giving first *amav-so* and then *amasso*. So *rogavisit*, *rogav-sit*, *rogassit*; *habevisit*, *habev-sit*, *habessit*. But Pott objects to this view and maintains that *amasso* cannot come from *amavi*, but only from *amasi*. No trace of any such perfect has, however, been preserved. Indeed, Curtius and Corssen both regard the perfect in *si* as unknown to derivative verbs. The words of Curtius are: "Das Perfectum auf *si* ist den abgeleiteten Stämmen fremd"; and of Corssen: "Die lateinische Sprache bildet keine Perfecte auf *si* in den auf *ā*, *ē*, *ī* auslautenden verbal Stämmen." Corssen, however, while he thus rejects the suggestion of Pott, also takes exception to the more common explanation on the ground that *v* is nowhere else assimilated to *s*. He conjectures that *v* is dropped and *s* doubled in compensation.

But the views set forth in this paper seem to me to furnish a more natural and satisfactory explanation of these peculiar forms. We have observed that the tenses for completed action in most primitive verbs are formed by appending the corresponding tenses of *esi* to the verb-stem. Now if the future perfect and the perfect subjunctive of this auxiliary be appended to verb-stems in *a* and *e*, these archaic forms are at once produced. Thus, *ama-isiso*, *amasso* (*i* dropped); *roga-isisit*, *rogassit*; *habe-isisit*, *habessit*. Whether at this time the perfect indicative ended in *si* or *vi* makes not the least difference. The tense-forms *amavi*, *amaveram*, *amavero*, etc., are entirely independent of each other. They are all produced in precisely the same manner by appending the tenses of the auxiliary to the verb stem: *ama-fui*, *ama-fueram*, *ama-fuero*. *Amavero*, therefore, is not formed from *amavi* by appending *ero*, but from *ama-* by appending *fuero*, just as *amavi* is itself formed from *ama-* by appending *fui*. Accordingly the explanation of *amasso* as from *ama-isiso*, and of *amassim* as from *ama-isisim* does not at all involve a perfect *amasi*. Such a perfect may have existed, but it is not at all necessary to our explanation. The fact that different auxiliaries may be used in forming different tenses of the same verb is fully attested by such forms as *ama bam*, *ama-rem*; *dice-bam*, *dixi*.

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Our discussion seems to authorize the following conclusions:

I. The Latin, in common with all the cognate tongues of the Indo-European family, inherited a simple reduplicated perfect formed by appending the ordinary personal endings to the perfect stem, which was the root reduplicated. Among these primitive perfects was that of the auxiliary, originally *asasma*, which became in the Latin *esismi*, *esisti*, etc., finally shortened in the classical period to *esi*, *esisti*, *esit*, *esimus*, *esistis*, *eserunt* or *esere*. Thus were produced in this auxiliary the peculiar endings of the Latin perfect. From the stem *esis* were also formed all the tenses for completed action: *esismi*, *esisam* = (*e*)*s-eram*, *esiso* = (*e*)*sero*, *esisim* = (*e*)*serim*, *esissem*, just as from *es* were formed *esmi* = *sum*, *esam* = *eram*, etc. This, the original type of the Latin perfect, has not been preserved except in *esi*, a form used only in compound perfects in *si*: *carp-si*, *dixi*, etc.

II. The Latin, at a very remote period, formed a compound reduplicated perfect, together with all the other tenses for completed action, by appending the auxiliary *es* to the perfect stem. Thus *cecin-ismi* (= *cecini*), *cecin-eram*, *cecin-ero*, etc.; *fufu-ismi* (= *fufui*), *fufu-eram*, *fu-fuero*. But the auxiliary *fufui* finally lost the reduplication and became *fui*, *fueram*, etc. To this class belong all Latin perfects in *i*.

III. The Latin finally formed a new compound perfect, together with the other tenses for completed action, by appending the perfect of the auxiliary, together with its other tenses for completed action, to the verb stem, rarely to the present stem. Thus:

1. Most consonant stems appended the auxiliary *esi* with its other tenses for completed action: *carp-si*, *carp-s-eram*, etc.; *dix-i*, *dix-eram*.

2. *A*, *e*, and *i* stems and some consonant stems appended the auxiliary *fui* with its tenses: *amavi*, *delevi*, *audivi*, *alui*, *rapui*.

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II.—*On an English Consonant-Mutation, present in PROOF, PROVE.*

By S. S. HALDEMAN,

PROFESSOR OF COMP. PHILOLOGY IN THE UNIVERSITY OF PENNSYLVANIA.

In 'proof' and 'prove' a surd consonant indicates a noun or an adjective, and a sonant one a verb, a feature which is more or less present in the following examples, extending to one hundred and fourteen pairs. The mark (*) prefixed indicates archaic or local forms.

abuse *n.*,	abuse *v.*	dike,	dig
advice,	advise	drop,	dribble
analys-is,	analyse	duck, juke,	dodge
ascent,	ascend	excuse,	excuse
bath,	bathe	fros-t,	freeze
behoof,	behoove	gait,	gad
belief,	believe	gilt,	gild
bent *n.*,	bend	girth,	gird
brass,	braze	glass,	glaze
breath,	breathe	gloss,	gloze
bulk,	bulge	graff,	en-grave
calf,	calve	grass,	graze
*chast ĭce†,	chastise′	grease,	grease
chief,	achieve	grief,	grieve
choice,	choose	grip,	grab
cicatrĭce,	cicatrĭse	grutch,§	grudge
clack,	clang	half,	halve
click,	clink	halt,	hold
cliff,	cleave	hilt,	hold
close,	close	hiss,	whiz
cloth,	clothe	hoof,	hoov'd ‖
concise *a.*,	incise	house,	house
crank,	cringe	kerf,	carve
cross,	cruise	leaf,	leave
delf (a mine),	delve	life,	live
device,	devise‡	lip,	blab
diffuse,	diffuse	loath *a.*,	loathe

† "As she from Collatinus wife
of chastice bore the bell."—*Turberville,* in Richardson.

‡ "That of this land's first conquest did devize."—*Spenser.*

§ "To whom he bore so fell a grutch,
He ne'er gave quarter t' any such."—'*Hudibras.*'

‖ "His horses hoov'd with flint."—*Henry King* (1591–1669).

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loss,	lose	shafe‖,	shave
metamorphose *n.*,	-oze †	sheaf,	sheave
mouse,	mouse	sheath,	sheathe
mouth,	mouthe	shelf,	shelve
nip,	knab, nibble	sign,	resign
noose,	nooze	slip,	slive
ob-tuse,	con-tuse	smutch,	smudge
of-fice,	suf-fice	sniff,	snivel
paralys-is,	paralyse	sooth *a.*,	soothe
practice,	practise ‡	(sprout),	browse
prem'iss,	premise'	staff,	stave
price,	appraise	stipe,	stab
profuse,	suffuse	strife,	strive
prom'ise,	com'promise	stuff,	*stive, steve
proof,	prove	swath,	swathe
purpose,	propose	teeth,	teethe
recipient,	receive	tenth,	ti..the
rap-acious,	rob	thief,	thieve
reef,	reeve	tractīle,	drag
ref'use	refuse'	treat,	trade
relief,	relieve	triple,	treble
remiss *a.*,	remise	trōth,	betrōthe
rent *n.*,	rend	tussle,	touse
reproof,	reprove	tweak,	tweag
reproof,	reprieve	use,	use
rip,	rive	waif,	waive
sacrifice§,	sacrifice	wife,	wive
safe,	save	woof,	weave
scath,	scathe	wreath,	wreathe
serf,	serve	wreath,	writhe

The pairs 'give' 'gift,' 'drive' 'drift,' do not belong here the *f* being due to the participial *t*, which is also present in 'descend' 'descent,' 'extend' 'extent,' 'portend' 'portent,' and many others. The noun 'hold' is often pronounced *holt*, and Chaucer has 'holte' for a strong-hold or castle.

The verbs 'bequeathe,' 'crave,' 'drowse,' 'lave,' 'rave,'

† Geo. Edwards, Discourse on Birds, 1795, p. 14.

‡ "Practized."—*Spenser*, 1580.

"nought can be more disgusting to the wise,
than pride, which none but silly fools practise."
—*J. B. Gilchrist*, LL.D., 1821.

§ Compare 'orifice,' 'benefice,' 'artifice.'

. . . . . "In Dares' stead I offer this,
Eryx! accept a nobler sacrifice:"—*Dryden*, Æn. 5, l. 643.

‖ As in 'spoke-shafe,' a wheel-wright's implement.

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'please,' 'raise,' 'praise,' 'seize,' 'seethe,' 'soothe,' 'advertise,' and others, are not accompanied by surd nouns.

Many words are used both as nouns and verbs, without a change of form, such as 'glide,' 'rise,' 'slide,' 'slice,' 'scoff,' 'pace,' 'race,' 'revise,' 'exercise.'

In some cases a change of form would cause confusion with other words, as in 'cease' 'seize,' 'loose' 'lose,' 'bite' 'bide,' 'rip' 'rib,' 'dose' 'doze,' 'hiss' 'his,' 'lease' 'lees,' where the *z*-sound as a plural sign adds to the confusion.

III.—*On Begemann's Views as to the Weak Preterit of the Germanic Verbs.*

By FRANKLIN CARTER,

PROFESSOR OF THE GERMAN LANGUAGE AND LITERATURE IN YALE COLLEGE.

The so-called weak preterit in the Germanic verbs has long been regarded as composed of the stem of the verb and the past tense of a strong verb from the root found in *da* in the Latin *condĕre*, θη in the Greek τίθημι, and in the Sanskrit *dhâ*. This belief dates from the sharp investigations of Grimm, whose influence induced Bopp to abandon his previously adopted view of the derivation of this weak preterit from the past participle, and to accept the theory of composition. Bopp's supposition of the derivation of these preterits from the participle was doubtless suggested by the resemblance between these forms. This resemblance is marked in the regular verbs, but is striking in those verbs which form somewhat irregularly their preterit tense and past participle, viz.: the preteritive and a few others. Of the preteritive, *magan* (preterit *mahta*, participle *mahts*) may serve as an example. Of the others, *þugkjan* (preterit *thuhta*, participle *thuhts*). This resemblance is at first notice the most striking feature of these forms; and, as we have mentioned, it seemed at first to Bopp neither accidental nor incidental, but organic. The sharper sighted Grimm discovered a resemblance between

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these preterits and another form, so peculiar as to convey to his mind a notion of kindred more deeply rooted than that which was implied by the simple agreement of form between the preterit and the participle. This was the perfect agreement of the inflection endings in the dual and plural of the regular weak perfects with the endings which a strong verb of the second class from a stem ending in *d* would have in the preterit, and which the lengthened stem *bidjan* actually presents in the preterit. This resemblance becomes clear by a comparison of the preterits.

Strong preterit, from *bidjan*.	Weak preterit, from *nasjan*.
baþ	nasida
bast	nasidês
baþ	nasida
bêdu	nasidêdu
bêduts	nasidêduts
bêdum	nasidêdum
bêduþ	nasidêduþ
bêdun	nasidêdum

A resemblance so complete in the dual and plural naturally suggests an extension to the singular; and, time being given for the wearing away of the endings in the singular, what better hypothesis is there for the origin of the tense than the composition of the stem of the verb *nasjan* with the strong preterit *dad*, *dast*, *dad*, *dêdu*, *dêduts*, *dêdum*, *dêduþ*, *dêdum?* What is more natural than to refer to a stem allied with the Sanskrit *dha* and with θη in τίθημι, this not wholly imaginary preterit, whose meaning, 'fixed' or 'placed,' combined with that of the stem of the verb whose preterit is to be analyzed, makes out in many cases so perfect a signification for the transitive preterit? This we know to have been Grimm's process of mind; and this explanation is so strongly supported by analogous facts in the history of language, especially as the evolutionists present that history, that the theory of composition has been practically unquestioned for fifty years.

Lately, however, the number of students in this field has increased, and the weight of those first names has somewhat lessened under the influence of discoveries and new theories, and naturally there is new investigation of principles long

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accepted. This hypothesis of Grimm's has, like others of long standing, been weighed anew. Begemann, one of the professors at the Academy for Modern Languages in Berlin, published in 1873 an able and learned pamphlet attacking the composition theory as affecting these preterits, and followed it up by a second treatise in 1874. The first pamphlet deals with the difficulties under which the composition theory labors or is said to labor, and proposes anew Bopp's first theory, that of derivation from the participle, applying it, however, to the dual and the plural, as well as to the singular. The second pamphlet deals largely with the possibility (strongly denied by many defenders of the old theory) of the derivation of an active transitive preterit from a passive participle, though many of the arguments of the first treatise are restated and newly fortified in the second.

One of the difficulties for the Grimm hypothesis of composition arises from the fact that it is at best no more than an hypothesis. As a theory to account for changes that took place in a period without literary records, it can never be anything but an hypothesis, probable enough, but never a demonstrated certainty. The same thing, however, must be said in regard to any other method of accounting for the formation of these preterits; and the question is, therefore, one of a choice between hypotheses. Which has in its favor more facts from the general field of linguistic growth and from the special field of the Germanic tongues?

It should be stated in the outset that the theory of composition advanced by Grimm and generally approved by Germanic scholars may be accepted in its outline, without committing the accepter to any one of the dozen different methods by which the details of the composition and its development have been evolved. One may fully believe in the validity of the composition theory, without accepting either Grimm's theory of an original ending *a* for the first person preterit singular of all strong verbs, or Holtzmann's original ending *dida* for the first person singular of the weak preterit, or Scherer's aorist in old German, or Grein's original *dads* for the second person singular, or Meyer's root *dadh*. Had the formation taken shape in a

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period on which literary records throw a clear light, the hypothesis either would become a demonstrated certainty, like the composition of the future and conditional in the Romance languages, or would be disproved. Conjectures in either event would be valueless. But these conjectures, worthless in such a condition, have for us now the value of possible modes of origin; and though nearly every investigator has failed at some point to provide full analogies from the Gothic or other Germanic tongues for each supposed process, yet the strength of one may perhaps in some relation be made to supplement the weakness of another; and certainly the pure and simple theory does not involve one of the crude evolutions which have been thrust upon it. It is then no overturning of the theory itself, if the bizarre methods of development which have been applied by indiscreet defenders in order to sustain it, are overthrown. Begemann has brought to this work a keen critical faculty, and the oversights and solecisms of all supporters of the composition doctrine are thoroughly exposed. An oversight, for instance, was without doubt the assertion of Bopp, that "in the second person singular of the Old High German *tâti* from *tatati* begins already the misunderstanding, and only the first and third persons, *tëta*, 'I did,' 'he did,' preserve the ancient standpoint with distinct and simple reduplication-syllable." For Bopp assumes for Gothic a stem *dad*, resting on an old reduplication of which the language is no longer conscious, and deduces from the plural *dâdun* of the Old High German a secondary root *dâd* and a present *didu*, and thus third person plural *dadadun*, contracted to *daadun*, *dâdun*. Now Begemann shows (and has, by correcting Bopp, done service for the friends of the composition theory) by a careful comparison of the preterit forms occuring in the oldest documents from Old Saxon *duan*, Anglo-Saxon *dôn*, that the forms like *dëda* and *dide*, which have been taken by some supporters of the composition theory to be early reduplicated forms, must be relatively late, and that the earlier forms were of the strong conjugation. In other words, just what the weak preterit in the Gothic verbs seems plainly to imply, viz.: that an auxiliary from the past of a strong verb

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has been received by and incorporated with the stem in *nasi-da*, *-dês*, *-da*, *-dêdu*, *-dêduts*, *-dêdum*, *-dêduþ*, *-dêdun*, is borne out by a comparison in Old Saxon and Anglo-Saxon of the earliest preterit forms of this auxiliary verb. The form *dadi* must be earlier than *dedôs* and *dâdun*, earlier than *dëdum;* and the verbal forms *dæde* and *dædon*, adduced by Grein, *should be* the remains of the strong verb in Anglo-Saxon. Weak forms supplanted these and, as in Old High German, so in Old Saxon, the second singular and all persons of the plural and the subjunctive bear the impress of the strong inflection. We have then in these dialects remains of that strong verb which the Gothic and Old Norse show us only in composition. We must thank Begemann that in rescuing *tëta* and *dëda* from over zealous advocates of the composition theory, he has established the right relation between the double forms in Old Saxon and the Old High German. We do this without in the least accepting his supposition for the origin of *tëta* in Old German. We hold that the exhibition of a reduplicated or other form of the root used to create the compound is of little importance in comparison with evidence for the composition itself; and the demonstration of an original strong preterit for the verb 'to do' in these three languages, Old Saxon, Old High German, and Anglo-Saxon (though in the latter the form rests on slender foundation from documents), is something gained for the composition theory. This may indeed prove that *nerita* is not contracted from *neri-tëta*, or even that *tëta* and *nerita* are precisely similar formations, but it also demonstrates that the strong tense *da*, *dês*, *da* (which most regard as shortened from *dad*, *dast*, *dad*), *dêdu*, *dêduts*, *dêdum*, *dêduþ*, *dêdun*, has its analogies in the sister, if not younger, dialects. Begemann seems himself to half suspect that he has helped the cause which he would oppose, for he says at the foot of page 19: "But thereby nothing is gained for the composition, for I have above shown that Old Gothic *nasidad*, *nasidast*, *nasidad*, could only become *nasidaþ*, *nasidast*, *nasidaþ*." The passage referred to, on page 9, concludes: "The rise of *nasida* from *nasidad* by the loss of *d* cannot be conceded. Also the deduction of *dês* from *dast* stands in contradiction to analogous

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forms: the verbs *qvithan*, *vairthan*, *anabiudan* have in the second person singular of the preterit *qast*, *varst*, *anabaust*. Here, and also everywhere else, has the *st* produced from a dental and *t* maintained itself. If accordingly *nasidast* had been the ground form, it would have remained uninjured. But if one would even grant the loss of the *t*, the transition from the created *das* (for *dast*) to the actually existing *dês* would be incomprehensible." That is, the analogies of the Gothic, as they are known to us, do not favor such a change. That is all of the "unbegreiflich" which the change involves. Begemann goes on from the passage just quoted to add: "Since now, however, the forms *nasida*, *nasidês*, *nasida*, actually exist in harmony with Old High German *nerita*, *neritôs*, *nerita*, we must unconditionally abandon the idea of composition for the singular." On page 15 of the introduction to his treatise "Zur Bedeutung des schwachen Präteritums" he adduces in order the arguments which have led him to reject the composition theory. The first is that "nowhere outside of the Gothic are the slightest traces of a composition to be discovered." In another place (p. 32) he says "surely we must presuppose everywhere (that is, in all numbers) composition and accordingly mutilation in the singular, or throughout connection with the participle and enlargement in the dual, plural, and subjunctive"! This, then, is the argument: "*Nasida* (Gothic) and *nerita* (Old High German) belong together." Again: "If *nasidêdum* is a compound, so is *nasida*, and *nerita* must also be one." Again: "The theory is false, because there is not a trace of the composition outside of the Gothic." Why should not the relation work both ways? If resemblance in form between *nerita* and *nasida* can be used against the composition theory in respect to *nasida*, because *nerita* is claimed to be no compound, why cannot the same evidence be used for composition in *nerita*, when *nasida* is claimed to be a compound, as the traces of composition in dual and plural indicate to many? This first argument begs the whole question. Begemann's own exhibition of a strong preterit from the verbs *duan* O. S., *dôn* A. S., *thuon* O. H. G., corroborates the assumed existence of an early strong preterit

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dad in Gothic, whose dual and plural are perfectly presented in the regular verbs. If ***nasidêdum*** is a composed form, Begemann himself admits that ***nasida*** must be composed. If ***nasida*** is composed, admitting that ***nerita*** "belongs with it," he ought to concede composition for ***nerita***. Grimm held, and many now hold, that the singular ***nerita*** and the plurals ***neritumês***, ***neritut***, ***neritun*** show composition. It is a subjective dictum that there is no trace of a composition outside of the Gothic; and Begemann himself acknowledges that this argument by itself alone could decide nothing. Let me note in the argument that he seems to imply that there is something very like a trace of composition in the Gothic. This first argument properly stated covers the same ground as the third (p. 15 of the second treatise), but it involves much more. The third reason for rejecting the composition is the "impossibility of explaining the forms ***nasida*** Goth., ***nerita*** O. H. G., by composition." If, as the first reason declares, there is "no trace of composition outside of the Gothic," why is a single Old High German form ***nerita*** picked out and held up as an especial hindrance to the acceptation of the composition theory? It ought not to be. The difficulty is in the Gothic singular ***nasida;*** and if that difficulty were once removed, if in accordance with known laws of Gothic formation the singular ***nasidad***, ***nasidast***, ***nasidad***, became ***nasida***, ***nasidês***, ***nasida***, there would be traces enough of composition "outside of the Gothic." The first and third reasons are then to be reduced to the simple reiteration that it is "unbegreiflich" how ***nasidad***, ***nasidast***, ***nasidad***, could become ***nasida***, ***nasidês***, ***nasida***.

It is true that we find no Gothic forms older than the ***nasida***, ***-dês***, ***-da***. Begemann holds that O. H. G. ***nerita***, ***-tôs***, ***-ta***, are identical with them, as the ***dagê*** of the Gothic genitive plural strong declension is ***takô*** in Old High German. From the identity of these forms he infers that we must have the primeval Germanic form not so much back of these forms as in them. It is much the same line of thought when he rejects the ordinary view of the "lautverschiebung" and declares that the surd ***p*** in Old High German ***puochâ*** is older than the sonant

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b in Gothic *boka*. Surely it is more in accordance with the processes of language as they appear in the Indo-Germanic families, to infer rather that we have not in the singular *nasida* and *nerita* the primeval Germanic form than that we have. Attrition, mutilation, phonetic decay (whatever we call the process), would lead us to expect a *modification* of the form if composed of a stem and a strong preterit, and it is rather a surprise that no such modified form appears in the Gothic plural, than that there is such a mutilation in the Gothic singular. However, the correspondence of the endings with those of all strong preterits in the dual and plural may have produced from resemblance a tendency to continuance, and thus preserved them, while the final sonant *d* or aspirate þ seen in the strong preterit of the supposed stem *did* (as it is elsewhere found without an immediately preceding consonant only in the preterit of *bidjan*) had little or no class feeling to maintain it and might easily be lost. It is in accordance with the very nature of violent mutilations that they take place before or rather behind all literary record of them. When once the literary record begins, the conservative force is greatly augmented, and it by no means follows that the earliest documents show us the primeval forms.

The second reason which Begemann gives for rejecting the composition and assuming origin from the participle, namely, that in all the Germanic languages since the earliest times the closest formal relation has existed between the preterit and the participle of weak verbs, certainly has a serious aspect. It was this close relation, as has been noted, which induced Bopp at first to derive the preterit from the participle. For this close similarity but three possible methods of origin can be assigned: it may be accidental, or incidental, or organic. Considering the number and completeness of the agreements, not merely in the regular verbs of each class in Gothic, but also in the preteritive verbs and in those omitting the connecting vowel in the preterit, and likewise in other Germanic languages in cases where participles exist, an accidental resemblance cannot be assumed as accounting for *all* the agreements. There remain two other possibilities.

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The resemblance of form is, partly at least, either incidental or organic; that is, either it is the result of assimilations between the forms, or the one is derived from the other. Either of these suppositions would account for the resemblance. Under the influence of either the derivation of the preterit from the participle or the assimilation of the preterit to the participle, the coincidence of stem-form might be thus complete. The derivation of the participle from the preterit is not to be thought of, as the participle is the descendant of—rather the same as—the Sanskrit participle in *ta*, Greek *το*, *τος*, Latin *to*, *tus*. Begemann, in view of this uniform resemblance, holds the doctrine of assimilation to be unreasonable, and the doctrine of organic development of preterit from participle to be the only adequate solution of the form. In reality his second, fourth, fifth, sixth, and seventh arguments for his view are simply varying presentations of this one fact of striking resemblance between the two forms. His fourth argument is the impossibility of the origin of the primeval preterits *mahta*, *brahta*, *þahta*, etc., from the hypothetical ground-forms *magda*, *braggda*, *þagkda*. Of course the alternative thought is, that they can be perfectly accounted for by derivation from the participle. Grimm, Bopp, Schleicher, Leo Meyer, Moritz Heyne, and Holtzmann have all given an account of processes possible to form these preteritive preterits from the stem of the verb and the ending *da*. These explanations were independently conceived and are different from each other. Begemann reviews them and finds each account inadequate or unsupported by analogies, and some, notably that of Moritz Heyne, absurd. It is easy thus to throw contempt on the theory; but the theory is not responsible for the blunders made in its defence.

It is one of Begemann's points against the theory of composition that in the Gothic and the Old Norse this supposed auxiliary (*da*) does not exist in an independent form; and in his judgment its use as part of a supposed preterit compound and its existence in the substansive *dêds* Goth., *dâd* O. S., *tât* O. H. G., ought to have kept it alive if it originally existed. But not contented with the verb's non-

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existence in Gothic and Old Norse, he devises an original non-existence for it in the earliest forms of High German and Saxon dialects, and supposes it to have been derived in these languages from the substantive *tât* O. H. G., *dâd* O. S., after the separation of the two groups. Begemann's reasoning that its use as an auxiliary in the preterit would have preserved the verb, is for the Gothic and Old Norse. But the verb's existence in the Saxon and High German group weakens a little this argument. Therefore the gratuitous supposition of a late origin must abolish its early existence in the latter group. It did not occur to Begemann that the participles which in his judgment have generated the preterits must, by his argument against the original existence of a strong verb (*do*) in Gothic, be preserved. Where is the participle, for instance, that created *vissa*, the preterit of *vait?* Not in the Gothic, though the substantive *vissei* in Gothic presents a parallel to *dêds.* How could the participle generate the preterit and perish? If it could, why might not also the strong preterit of the verb 'to do' and the verb itself perish in spite of having been used to form the weak preterits?

Not satisfied with magnifying the actual sound-difficulties, which for us make the transition of the stems in the preterits of some of the preteritive verbs (when combined with the suffix *da* or *dad*) to their present form strange, Begemann invents difficulties in the case of *gamotan*, *vitan*, *kaupatjan*, by supposing that the strong preterit second person singular ended in *st* instead of *t*. The ending *st* as in *bast* (*bapt*), *vaist* (*vaitt*), has made the change from *gamot-da* or *gamot-ta* to *gamos-ta* seem natural. What support is there for the theory of a Gothic second singular ending *st*? the single anomalous reduplicated form *saisost*. Only this verb and dental stems have *st* in the second singular preterit. If the final letter of dental stems is dropped before Begemann's imaginary *st*, why should every other final stem-letter be able to turn out the *s*? When Begemann endeavors to brace himself up by the Old Norse usage, he finds no solid support. Bezzenberger ("Zeitschrift für Deutsche Philologie," vol. 5, p. 474) has given illustrations enough to prove that *z* in the second singu-

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lar of the Old Norse preterit is often a graphic representation of *s* and not a combination of a dental with the *s* of a personal ending *st*.

Begemann's fifth argument against the composition theory, that the plurals belonging to the oldest preterits *mahta*, *brahta* (*mahtêdum*, *brahtêdum*), can never have had a *dêdum* in their earliest shape, is not a whit different from the third. It is anew the statement that the resemblance between participle and preterit is organic. When, however, he adduces the enigmatical *iddjêdum* as an argument for his view, he seems to believe, because he has one form in which the part of the verb most suggestive of composition no longer begins with a lingual mute, that he is justified in claiming it as a new argument for the derivation of preterit from participle. Were the parent participle here, or could its form be undeniably assumed from the other Germanic languages as coinciding in stem with *iddja*, we might concede force to the argument. But as the participle should end in *t*, at least in a lingual mute, it seems necessary to get rid of the *j*, and accordingly in one place the *j* is compelled to become inorganic, "ein ableitendes *j*." Nevertheless the argument as a whole professes great respect for the age and pedigree of the *j*, though rather more honor is paid to *d*, perhaps because most of the advocates of the composition theory have regarded the *dd* as as inorganic before and generated by the *j*. Müllenhoff makes the form *iddja* come from Sanskrit *ijа*, *ijâja*, and supports the inorganic evolution or assumption of *dd* before *j* by the Gothic genitive *tvaddjê* and the substantive *vaddjus*. Begemann begins a long way off with his intrenchments to lay siege to the enemy's camp, namely with the Sanskrit comparative, which he assumes was formed by *idj*; so also was it in the Greek, ἡδιδjων, ἡδιjων, ἡδιων, ἥδιον, and in Latin *mav-idjor*, *suav-idjor*, *suav-ijor*, *suavĭor*, *suavĭor*; Gothic *sut-idj-an*, *sut-izj-an*, *sut-iz-a*(*n*). To the side of the Gothic *tvaddjê*, the Old Norse *tveggja* is summoned; both (it is claimed) can have had a nasal form as forerunner; one was *tvandjê*, the other *tvengja*; both of these can easily have come from *tvangdjê*, and a Gothic *tvandjê* for *tvangdjê* is compared with Latin

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quintus for *quinctus* and has therefore "an absolutely certain analogue." *Fidvôr*, in Begemann's opinion, is perhaps from *fingdvor*, to which the corresponding Lithuanian form *keturi* certainly does not directly point. *Frijôn*, *fijan*, and the present optative of the Gothic *sein* (*sijan*) are also adduced to prove that there is a tendency to drop the *j*, though the greater number of cases in which it is preserved are said to show that it was "original." Therefore in *iddja* we must not suppose that a hypothetical *ija* has been loaded down with an inorganic *dd*. And at last Begemann tells us that he has the "boldness" to deny that the root *i* in Latin *ivi* (for instance) ever existed alone, and asserts that *d* has always belonged with it and that it was *idvi* formerly in Latin. Consequently, the *eode* of Anglo-Saxon belongs with *iddja*, and the mystery of the latter form is not merely cleared up, but its existence and descent disprove the composition theory. Begemann is by no means the first to connect Gothic *iddja* and Anglo-Saxon *eode*, and Grein's connection of the two words, deriving the Gothic from *idjan* or *ithjan*, and making *iddja* and *iddjêdum* transpositions for *idida* and *ididedum*, seems simpler than Begemann's primeval combination *dj*. Grein's theory (suggested also by Grimm) is mentioned in a note by Begemann, but we do not find any refutation of it in either treatise. Grein and Begemann are not very far apart in respect to this root. If the root is *id* and the *j* "ableitend," it is only in the evolution of the perfect that they differ, and Grein's hypothesis is worth just as much *for* the composition as Begemann's *against* it. Certainly no great argument can be drawn from *iddja* against the composition theory, for it is quite as explicable by this theory as by a reference to an unknown participle.

If, as Begemann says, *iddja* has been a "Schmerzenskind" to some of the composition champions, we must also concede to him a long parturition therewith, nor can we admit that his demonstrations are so convincing as to justify the statements on page 20 of the introduction to his second treatise. His poetical words are: "Men have played evil tricks with the poor innocent *iddja;* but why does it have the boldness

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not to be willing to adapt itself to the theory? For that it must atone in the straight jacket. Yet linguistic facts do not allow themselves to be adapted to measuring rules; *iddja* remains *iddja* and *iddjêdum* remains *iddjêdum;* the endings *a* and *êdum* do not allow their true force to be explained away; they exist to all eternity. This is the most brilliant confirmation of my view and at the same time a witness against the assumed *dêdum* not to be killed." "Linguistic facts do not allow themselves to be adapted to measuring rules"; yet an anomalous *iddja* without any generating participle shall be claimed as the "most brilliant confirmation" of the theory that the weak preterit is the offspring of the participle. "Linguistic facts do not allow themselves to be adapted to measuring rules"; but the anomalous form *saisost* may dictate a second singular ending to the preterits of all strong verbs, and what was "in Old Norse only an occasional usage" shall, departing from this single form, he claimed as "eine durchgreifende Regel" in Gothic. "Linguistic facts do not allow themselves to be adapted to measuring rules"; but the *ddj* in *iddja* may suggest *dj* as a newly discovered method of comparison, and impose it on entire classes of Indo-Germanic comparatives!

But the seventh and crowning reason for the derivation of the weak preterit from the participle is the "quite particularly weighty fact that by the derivation from the participle all difficulties present themselves as quite natural appearances, and in general all is in the fairest order." So it seems to Begemann, but he admits the difficulty of the element *ed* inserted according to his theory before the personal endings of the dual and plural. He calls this difficulty "ein unschuldiger waisenknabe," "an innocent orphan boy," in comparison with the difficulties that beset the composition theory. Why he did not call it a girl (it would have been a more poetic picture), I do not know; but he calls it innocent, because in his judgment the mistakes of the advocates of the composition theory are flagrant; and he calls it an orphan, because he does not wish to acknowledge it as his. It is a foundling whose father must be made responsible for it, and is an

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insuperable hindrance to Begemann's withdrawing in triumph. Such a child unprovided and unaccounted for is an uncomfortable fact in his domestic economy. Begemann suggests its identification with the termination in *faheths*, but it is simply an accidental agreement of form without any support from analogy or meaning; indeed we understand him to claim that the meaning of the active preterit is deducible from the participle. Besides, not merely its appearance, but its appearance in dual and plural alone, just where it would belong on the correctness of that form of the composition theory which makes the *da* a strong preterit from the root *did*, is likewise a serious difficulty for Begemann to confront. Not to emphasize the fact that this increment, on our author's theory, would be anomalous in the Germanic languages, why should it appear simply in dual and plural? If the answer be that it is according to the analogy of strong preterits, we ask: Why then just the form *ed*? Does not this analogy with the strong preterits point to some intimate connection? and what will acount for the *ed* but an actual strong preterit with that very form in dual and plural? Nor is the disappearance of the *ed* (if it really is not present) in Old High German and the kindred dialects, as Begemann claims, against its original existence as part of the form. Why not also assume that the dual cannot exist in Gothic, as it does not occur in the other Germanic dialects? If the dual fell out in Old High German why not also the *ed* (or better the syllable following it), a part used for the subordinate purpose of inflection? It is no argument to assert that if *neritum* in Old High German had once been *neritâtum*, the *tâ* would never have fallen out. Such a claim is against the teaching of compounds and derivatives in the Indo-Germanic family. Why not say that the Latin and Celtic could not have formed futures by adding *bhu* to the root of the present (*predicabit*, *predchibid*), because the full form of the root is not retained? Why not deny that perfects in Latin and Celtic (*mansimus*, *rogensam*) are formed with the root *as*? Why not claim that *fuo* could never become part of a Latin perfect, and the present and imperfect of *habeo* in the Romance languages could never

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become in a mutilated form the endings of the future and conditional? Nor does it meet this objection to insist that the Germanic languages had another "betonungs-princip"; that the Old French *punir-avóns* is essentially different from Old German *neri-tâtum;* for the termination *ons* is the same for many first plurals, and for the French ear it must have been as necessary to discriminate between *avóns* and *soyóns*, as for the German ear between *tâtun* and *nâmun.*

One other difficulty in regard to the derivation of the weak preterit from the participle has been that of deriving an active, generally transitive, form from one commonly having a passive meaning. To remove this difficulty, which was but slightly considered in Begemann's first treatise, is the object of his more recent pamphlet, "Zur Bedeutung des schwachen Präteritums der Germanischen Sprachen." This treatise, like the other, shows great learning, and the collection of facts from the domain of the Indo-Germanic languages in regard to the relation of the active and the passive voices and the meaning of the past participle is valuable. Starting from the acute discussion of Dr. von der Gabelentz in the seventh volume of the proceedings of the Royal Saxon Scientific Society, who shows that the passive voice is rather a luxury than a necessity of language, Begemann endeavors to exhibit the evolution of the passive from the active. The first half of his treatise is devoted to the establishment of certain propositions. Passivity developes itself from activity through the medium of reflexiveness. Reflexiveness is expressed formally, or results from the conception ("vorstellung"), and remains unmarked. In the verb, the usage is various in this matter. In the noun, reflexiveness lies only in the conception. The first two of these propositions are virtually involved in Dr. von der Gablentz's discussion and illustrations of the passive in the Indo-Germanic family (pp. 527–535). Ingenuity and power in their fuller development cannot be denied to Begemann, but it is worthy of note that the analysis of any form favoring even remotely the composition theory meets summary condemnation from our author: thus, the aorist passive ἐτέθην, which is held by some grammarians to be a compound of the

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stem and the aorist ἔθην with the meaning 'I placed' (so that ἐτέθην would mean 'I placed to place myself,' 'I had myself placed,' or 'I was placed'), is pronounced to be simply a lengthened form of the aorist in ην. That the passive was developed from the active is possible. Many participles are cited in the second section of this treatise (pp. 92–124) from various languages of the Indo-Germanic group, in which an active meaning still inheres. From the Greek among others are mentioned τλητός, δυνατός, ἀδύνατος, ἑρπετός, λωβητός. From the Latin *potus*, *pransus*, *cenatus*, *peritus*, are familiar illustrations. When we come to the Gothic, Begemann's past participles with active meaning are few compared with those occurring in Greek, and into some of these few the activity is infused rather than inherent. Taking for instance *þaurfts*, the past participle of *þaurban*, which has the two meanings of 'needful' and 'useful' (if they are two), the activity of the latter 'that can be used' is not so prominent as to call for any explanation, or to go very far in accounting for the origin of active transitive preterits from past participles. However near one another active and passive may once have been, absolute original identity could not prove that, after they had once separated and the forms had received definite significations so opposed in nature as are the active and passive generally in the earliest records of our Indo-Germanic family, new forms of opposing meaning could be developed from either voice without any new element. This (if we understand the conditions) is the genesis which we are asked to accept, and this, even granting an age for the beginnings of Germanic speech surpassing that of the more eastern languages of the family, cannot become more than a doubtful possibility. It is also to be noted that the number of adjective-participles or participial adjectives having a meaning looking towards activity is much more numerous in the Middle High German than in the Old or the Gothic, though Begemann accounts for this by the comparatively abundant literary material of the Middle High German period.

It is from the highly interesting development of a participial perfect in the Iranian languages that Begemann derives his

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main analogies for the assumed development in the Germanic languages. The facts exhibiting this development are mostly taken from the works of Spiegel, and are clearly presented in the third section of our author's second pamphlet. A brief outline of the facts shows, even in the old Persian and Bactrian, the past participle assuming verbal functions with both active and passive meaning, though in the latter case the auxiliary 'to be' is commonly used with the participle, while in the former the participle is used alone. By the side of these forms the old tenses of past time exist and indeed greatly preponderate. But in the younger Hûzvaresh the old forms of past tenses have been completely supplanted by the past participle. The meaning of the participle is still either active or passive. In the latter case, as before, the auxiliary is commonly found, and often another auxiliary is added to the former. But number and gender have disappeared from the participle form. The person is ascertained from the connection or indicated by a pronoun. The auxiliary, if present, of course denotes it. In the somewhat younger Parsi there are the same relations, but this progress—that the participle when used for the first person singular has assumed the personal ending (Bopp regarded it as a form of the verb 'to be'), which is wanting, if elsewhere indicated. In the new Persian the development is completed. Separate auxiliaries are used for the active and the passive forms, but the old simple participle stem is used only as an active, and has adopted, after the fashion of the first singular in Parsi, personal endings for each person, except the third singular which remains in the stem-form. Striking as the facts are, they are not new, but have long been familiar to the students of Indo-Germanic speech, and most familiar to those who have most firmly believed in the composition of the Germanic weak preterit. Bopp's "Comparative Grammar" records the facts, though not with Spiegel's minuteness. If these facts show the possibility of the derivation of a preterit from the past participle, it is to be noted that the participle maintained and exhibited from the first the active meaning which Begemann is obliged to assume for the Germanic participle. It is true

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that in English active transitive verbs are in use from Latin past participles. It is true that in Middle and Old German present forms of transitive verbs have been in some cases derived from earlier participial or substantive forms, but to insist on the derivation of *all* transitive weak preterits from past participles whose early active meaning cannot be established, is to ask belief for something which the Iranian participle and its evolution cannot make probable. Nor does the illustration of the development of a preterit from a Hungarian participle (in a language that belongs to an entirely foreign family), though it is in its nature more analogous to the hypothetical development in the Germanic group, bring much support to the theory. Much nearer to the Germanic than the Persian even is the Slavo-Lithuanian branch of the Indo-Germanic family. It is the connecting link (if we may accept the statements of its expounders) between the Germanic and the Aryan members, both by grammar and word-fund. From the Lithuanian the composition theory receives a strong confirmation. Its imperfect of customary action is composed of the stem of the verb and the form *davan*. Whether this form be from the root *dha*, 'to place,' or not, there can be no doubt that this imperfect is formed by a composition of the stem with a past tense. However this intimate relationship between the Slavo-Lithuanian and the Germanic languages may be explained, whether by the influence, in a period later than the development of both languages, of Germanic authority over the Slavo-Lithuanian family, or by a community of the two stems at a period previous to the perfect development of either language, the *suk-davan* of the Lithuanian belongs with the *sôk-i-da* of the Gothic. The probability of the development of the Germanic weak preterit from the stem of the verb combined with the strong preterit of a verb from root *dha*, 'to place' or 'to do,' can hardly be doubted by one who gives proper weight to the formation of the Lithuanian imperfect and the relation of the languages of this group to the Germanic.

How then is the resemblance between the preterit and the past participle to be explained? If it be not accidental nor

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organic, it must be incidental, it must have come from assimilation. Bopp's idea of a "Schutzbündniss," a "defensive alliance," has a poetical sound and is perhaps a fanciful presentation, but there must be truth behind it. Especially in the preteritive verbs, verbs of such great scope and repeated usage, there would be a constant tendency to assimilate a newer preterit *kunda* to an established form *kunþs*, *magda* to *mahts*, *þaurbda* to *þaurfts;* and in cases where no participle had continued, analogy might have great force. In the case of the regular verbs, the resemblance is more apparent than real. Otherwise why should the termination *a* of the preterit go over into Old High German, and maintain itself so firmly, whereas the *a* of the present becomes *u*? Certainly there was something in that *a* of the preterit besides a simple personal ending or the *a* of a participial stem. This theory of assimilation finds analogies enough in the development of languages. Not to turn aside from these preteritive verbs, we see in English that the *l* in 'would' has forced its way into the preterit of 'can.' Into the present of *will* in old English the *o* of the preterit forced its way and produced a present *wol*, *wole*, which we have in 'I won't,' *I wol not.* That in the primitive period such an assimilation should take place, in case the meanings did not greatly differ, is quite conceivable. It is probably on this very ground of assimilation that we are to account for the loss of the final consonant in the singular, that is, the assimilation of the personal endings of the preterit to those of the present. Nor is there anything surprising in a double assimilation, an assimilation of personal ending to personal ending between preterit and present, and of preterit to participle in stem-form. That *nasidad* should become *nasida* by the side of *nasja*, and *nasidast* should become *nasidas* or *nasidês* by the side of *nasjis* is natural, and the theory of assimilation to the present, and a lengthening of the *a* in the second person singular seems more reasonable than Delbrück's ("Zeitschrift für Deutsche Philologie," vol. I., p. 128) assumption of a strong preterit *dad* resting upon *daddd* with the accent in *ddast* on the reduplication syllable after a Sanskrit analogy. To this assimilation the similarity

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of the singular personal endings of the present in both strong and weak verbs might contribute, and the subordinate relation of the second part of the compound would invalidate any argument for permanence of form in the terminations derived from the strong preterit and hence sustained by a class feeling. The permanence in Old High German of the Gothic *a*, *ês*, *a*, as *a*, *ôs*, *a*, while the present ending *a* of both strong and weak verbs is reduced to *u*, is an evidence that the *a*, *ês*, *a* is something more than a simple personal ending. How *neritâtum* could become *neritum* may be to some inexplicable. We do not so regard it, and Seiler's explanation on p. 455 of "Beiträge zur Geschichte der deutschen Sprache and Literatur" has much in its favor. That such a change did take place will be probable to him who carefully weighs the following considerations.

1. The Gothic dual and plural *nasidêdu*, *nasidêdum*, presuppose a singular *nasidad* compounded of the stem *nasi* and a strong preterit *dad*. This singular we have in the form *nasi-da*, *-dês*, *-da*. Corresponding with this, identical with it, we have *neri-ta*, *-tôs*, *-ta*, in Old High German.

2. The increment in the Gothic dual and plural cannot be accounted for on the supposition that the preterit is derived from the participle. Least of all can we thus explain the particular form *ed*, which is identical with the syllable corresponding in strong preterits derived from a stem ending in *d*.

3. The loss of a part of the stem or ending of the auxiliary, or a contraction or mutilation of the appended verb in the Old High German plural is natural, especially as the loss of the Gothic dual in the other Germanic languages shows an increasing tendency to disregard the fulness of the old inflectional forms.

4. The composed forms in Slavo-Lithuanic, the imperfect in *davan* and the participle in *damas*, nullify any probability of the derivation of the Germanic weak preterit from the past participle which might be deduced from facts in the Persian and Hungarian languages, as the Slavo-Lithuanian is the connecting link between the Germanic and the Aryan and much nearer the Germanic than the Iranian, and the Hunga-

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rian (which belongs to the Finnish class) is still farther removed from the Germanic.

5. To render assurance still surer, it is noted that the transitive meaning of the Iranian participle finds no analogue in the Germanic.

6. The persistence of what are called the personal endings of the singular in the weak preterit in Old High German and Old Norse, involves fuller vowels and stronger elements than those of the ordinary personal endings (in the present for instance) will account for.

7. For the close resemblance of the stem-form in past participle and preterit, the theory of assimilation in the more striking cases is adequate. The close resemblance may then be incidental without excluding the possibility that in less striking cases, as in *nasida*, it is accidental. The accidental resemblance may have promoted the incidental.

8. The anomalous form *iddja* connected by etymologists doubtfully with Anglo-Saxon *eode* can just as well, even better, be regarded as a transposed form for *idida* and claimed as harmonious with the composition theory, than made a main foundation of Begemann's view, especially as no generating participle can be exhibited. It is not the enigmatical exceptions, but the prevailing regularities, that are most valuable in discovering a principle of form-genesis.

Even if we accept Begemann's ingenious explanation of the forms characterized by the *rückumlaut*, and regard them as of equal age or older than the regular weak forms, *santa* for instance as equally old with *sentita*, this does not establish the derivation of the preterit from the participle. Begemann's full and doubtless accurate collections of forms certainly indicate an age for the forms with the *rückumlaut* no less than that of the regular forms; but if these forms are even older than the more regular ones, when both occur, and if they agree with the participle, nothing justifies us in claiming that they are not compounded or in regarding them as an argument against composition. That the Old High German *dursta* by the side of Gothic *þaursida* is from an obsolete present *durran* or *dursan*, and is of greater age than the Old Saxon *thurstida*,

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even if it is proved, does not demonstrate that it itself is not a compound. On the contrary the advocate of the composition theory has the same right as Begemann to suppose two preterits developed at different times from or analogous to different stems, and is *not* obliged to contract Old High German *heftitatun*, corresponding to Gothic *haftidêdun*, into the West German *haftun* in order to enlarge it again to *heftitun*. The results of Begemann's investigations into the relations of these forms, even if correct, do no more than convict some advocates of the composition theory of inaccuracy in respect to the *time* of development of the forms. All that he has proved may be brought into harmony with the composition theory.

The object of this article causes us to stop short of any examination of Begemann's views in regard to the *ablaut*, the *lautverschiebung*, and the personal endings of the Indo-Germanic verb. But it may be remarked that our author is nothing if not revolutionary, and we may be thankful for the discussion of these old questions. We expect that this attempt at revolution, like every other that rests on any partially legitimate protest, will result in a readjustment of some relations between contending parties, but are confident that this bold assault on the composition theory, as applied to the weak preterits, will only show that the foundations cannot be shaken.

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IV.—*On Some Forms of Greek Conditional Sentences*

By CHARLES D. MORRIS,

LAKE MOHEGAN, PEEKSKILL, N. Y.

I did not happen to be present at the meeting of the Association at Easton, and I do not, therefore, know whether the paper which Professor Goodwin read on the Forms of the Greek Conditional Sentence was subjected to any criticism at the time. On reading it, however, lately, I was struck by a certain statement in it which appeared to me questionable, and I accordingly submitted the point I refer to to some examination; not, I confess, as thorough as I could wish, but still sufficient to confirm me in the opinion I at first formed; and I should be glad, therefore, to place the matter before you in order that the facts may be tested by the judgment and reading of other members of the Association.

It is well known that Professor Goodwin, in his book on the Greek Moods and Tenses, and also in his Grammar, advances the opinion that there is no *essential* difference between the expression of a condition by ἐάν with the Subjunctive, and the expression of the same by εἰ with the Optative. He has felt the extreme difficulty of *defining* the exact implication of one of these as contrasted with that of the other; and has been driven accordingly to the conviction that such difference as there is consists only in the degree in which a certain quality which he calls "vividness" attaches to one or to the other. He finds that a condition may be expressed with a low degree of vividness by εἰ with the Optative; with a greater degree of it by ἐάν with the Subjunctive; while it is possible to express the same condition with a still greater degree of vividness by εἰ with the future Indicative; these three kinds of expression presenting, as it were, a positive, a comparative, and a superlative degree of vividness to the choice of the writer. He says ('Transactions,' p. 70): "The Optative in ordinary protasis is merely a vaguer or less vivid form than the Subjunctive for stating a future supposition, bearing a relation to the Subjunctive somewhat similar to that

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which the Subjunctive itself bears to the future Indicative. Thus we have three forms which may be used to express a future condition, differing essentially only in the vividness with which they state the supposition: *εἰ γενήσεται, if it shall happen; ἐὰν γένηται, if it happens* (i. e. *shall happen*); and *εἰ γένοιτο, if it should happen.*" And he remarks elsewhere that it evidently makes little difference in English whether we say "if he shall do this, it will be well," or "if he do this, it will be well," or "if he should do this, it would be well."

I think that a large amount of the assent which the Professor's views on this point have received is due to the fact that, when he places these forms in close connection with each other, he makes use of such vague expressions by way of illustration. "Do this" may mean anything, *possible*, *probable*, *likely*, or *impossible;* and since we are consciously or unconsciously aware of this, we feel that each of the forms of condition quoted would under certain circumstances be appropriate; and we do not, therefore, deny in our thoughts the substantial equivalence of the expressions, though it would be found that in practice they are used by no means without a conscious or unconscious discrimination. If this is true in English, I think it can be shown that it is far more true in Greek. But to show this we must not take such an example as *εἰ τοῦτο γένοιτο, καλῶς ἂν ἔχοι* to contrast with *ἐὰν τοῦτο γένηται* (or *εἰ τοῦτο γενήσεται*), *καλῶς ἕξει*, but must try to find actual sentences of which the material character is so distinct that the speaker or writer must have been conscious of it. And here I may say that I think the paper read at the Hartford meeting of the Association by Professor Sewall, though I agree in general with its conclusions, is less convincing than it might be, from the fact that the examples chosen are in several instances such as might with propriety be stated in more than one way. For example: in DEM. Phil. i. 25, *εἰ γὰρ ἔροιτό τις ὑμᾶς, εἰρήνην ἄγετε, ὦ ἄνδρες Ἀθηναῖοι; μὰ Δί' οὐχ ἡμεῖς γε, εἴποιτ' ἄν*, the same sense might have been expressed—not, I grant, so properly, but still without absurdity—by *ἦν γὰρ ἔρηταί τις, ... φήσετε.* And in the passage from the 29th section of the same speech, which

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Professor Sewall himself presents in two forms, a very slight change in the aspect in which the matter is regarded would make either mode appropriate. I propose to give one or two illustrations of conditional sentences in what I look upon as matter suitable to decide the question whether there is or is not any essential distinction of import between hypothetical sentences employing ἐάν with the Subjunctive, and those which exhibit εἰ with the Optative; and I will then come to the particular statement in Professor Goodwin's paper which attracted my attention and set me on this method of inquiry. I will, however, first state the four forms of particular suppositions together, in what I conceive to be their proper gradation, and will characterize each by a descriptive epithet and symbol which may hereafter facilitate reference.

The Hypothetical Period, i. e. the condition (or Protasis) together with the conclusion (or Apodosis), in all cases asserts the dependence of the conclusion upon the condition. Then we have:

Form α, or the *Logical* form, in which nothing more is implied than this logical dependence: εἰ τοῦτο γενήσεται, καλῶς ἕξει.

Form β, or the *Expectant* form, in which, beside the logical dependence, is implied an *anticipation* of the possible realization of the condition: ἐὰν τοῦτο γένηται, καλῶς ἕξει.

Form γ, or the *Ideal* form, in which, beside the logical dependence, is implied an *imagination* of the possible realization of the condition: εἰ τοῦτο γένοιτο, καλῶς ἂν ἔχοι.

Form δ, or the *Unreal* form, in which, beside the logical dependence, is implied a *negation* of the possible realization of the condition: εἰ τοῦτο ἐγένετο, καλῶς ἂν ἔσχεν.*

I will take first a passage which Professor Goodwin quotes, I think, in both his books. At the beginning of the Agamemnon of Aeschylus, the watchman on the roof of the palace at Mycenae indicates his fear that on the return of Agamemnon

* Of course the examples given are used for illustration merely, and are not intended to establish the correctness of the import attributed to each. I should say that I borrow the terms "Logical," "Ideal," "Unreal," from Professor Gildersleeve's Latin Grammar.

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he will not find things within the palace just as he would like to have them. But he dares not speak out himself (v. 36):

> τὰ δ' ἄλλα σιγῶ· βοῦς ἐπὶ γλώσσης μέγας
> βέβηκεν· οἶκος δ' αὐτός, εἰ φθογγὴν λάβοι,
> σαφέστατ' ἂν λέξειεν.

Now in this case will the Professor assert that it would have been possible for the watchman to have expressed himself in the Expectant Form or Form β? thus:

> οἶκος δ' αὐτός, ἢν φθογγὴν λάβῃ,
> λέξει σαφέστατ'.

He makes a supposition in regard to the future, but it is in a matter which, he must have been conscious, rendered the realization of it impossible; and he found in Greek a form of stating his supposition which conveyed the impression that it was one wholly ideal, and therefore employed it. Here in English too we must say: "If the house itself should (*or* were to) find a voice, it would speak most clearly," and in Latin we must say: "*Si ipsa domus vocem capiat, planissime loquatur*"; and in each language the substitution of the forms which are asserted to differ only in "vividness" from the Ideal form must be felt to be wholly inadmissible. I may quote here PLAT. Protag. 361 A, as it contains a supposition precisely like that of the watchman, and expressed, of course, in the same way: *καί μοι δοκεῖ ἡμῶν ἡ ἄρτι ἔξοδος τῶν λόγων ὥσπερ ἄνθρωπος κατηγορεῖν τε καὶ καταγελᾶν, καὶ εἰ φωνὴν λάβοι, εἰπεῖν ἂν ὅτι Ἄτοποί γ' ἐστέ, ὦ Σώκρατές τε καὶ Πρωταγόρα.* Could Socrates possibly have said, *καὶ ἢν φωνὴν λάβῃ, ἐρεῖν?* *

Again, in the Clouds of Aristophanes, after Strepsiades, in despair of inducing his son to place himself under the instruction of Socrates, has decided (*invita Minerva*) to go to school

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* It may be worth while here to illustrate the Latin usage in such cases of *sermocinatio*.

CIC. Cat. i. 19: *Haec si tecum, ut dixi, patria loquatur, nonne impetrare debeat?* and so in § 27 without Apodosis: *Si mecum patria sic loquatur.*

Auct. ad Her. iv. 66: *Si nunc haec urbs invictissima vocem emittat, non hoc pacto loquatur? . . . si nunc L. ille Brutus reviviscat et hic ante pedes vestros adsit, non hac utatur oratione?* It is true that in Div. in Caec. 19, Cicero says: *Sicilia tota, si una voce loqueretur, hoc diceret, . . . si universa, ut dixi, provincia loqui posset, hac voce uteretur.* But he here substitutes, not the form which Professor Goodwin regards as essentially the same as that employed in the former cases, but the Latin

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himself, Socrates submits him to an examination which only reveals the hopeless imbecility of the old man. After much questioning and severe denunciation of his pupil's stupidity, Socrates insists that he shall set his own brains to work and find out for himself some device by which he may hope to get rid of the fatal necessity of paying his debts, to attain which end was the purpose he had in view in enrolling himself as a member of the school. At last the old man cries out that he has it: that if he could buy a Thessalian enchantress and draw down the moon from the sky, and keep her locked up like a mirror in a close box—"Then what?" says Socrates; and his answer is (v. 754):

> *εἰ μηκέτ' ἀνατέλλοι σελήνη μηδαμοῦ*
> *οὐκ ἂν ἀποδοίην τοὺς τόκους.*

Here again I ask: Does any one suppose, if Strepsiades had stated his plan thus:

> *ἢν μηκέτ' ἀνατέλλῃ σελήνη μηδαμοῦ*
> *οὑπως ἀποδώσω τοὺς τόκους,*

that Socrates would have found himself able to tolerate the old man's arrogant stupidity for some fifty lines longer, as he does? That whole passage is full of conditions expressed by *εἰ* with the optative; but I select, as before, this one as being made in a matter which the speaker must have been conscious was unalterable. I will quote shortly two or three more passages which seem to me to resist as strenuously as the ones already cited a change into the forms supposed to be essentially equivalent, which I suggest as possible alterations.

Aesch. Pers. 431:

> *κακῶν δὲ πλῆθος, οὐδ' ἂν εἰ δέκ' ἤματα*
> *στιχηγοροίην, οὐκ ἂν ἐκπλήσαιμί σοι.*

Could the messenger have spoken thus?

> *κακῶν δ' ἐλεινὸν οὔποτ', ἢν δέκ' ἤματα*
> *στιχηγορῶ σοι, πλῆθος ἐκπλήσω λόγοις.*

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equivalent of Form *δ*, which the character of the supposition clearly entitled him to do, just as in the converse way, in Ter. And. ii. i. 10, Charinus says (in the Ideal form): *Tu si hic sis, aliter sentias;* when the sense would have justified the Unreal form *esses—sentires;* since, as Madvig says, by a turn of rhetoric an impossible thing is represented as if it might take place.

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PLAT. Rep. ii. 359 C: *εἴη δ' ἂν ἡ ἐξουσία ἣν λέγω τοιάδε μάλιστα, εἰ αὐτοῖς γένοιτο οἵαν ποτέ φασι δύναμιν τῷ Γύγου τοῦ Λυδοῦ προγόνῳ γενέσθαι.*

Could Plato have made Glaucon state his illustration thus? *ἔσται δ' ἐξουσία . . . . ἣν αὐτοῖς γένηται.*

PLAT. Euthyd. 299 D: *εἴη ἂν εὐδαιμονέστατος εἰ ἔχοι χρυσίου μὲν τρία τάλαντα ἐν τῇ γαστρί, τάλαντον δ' ἐν τῷ κρανίῳ, στατῆρα δὲ χρυσοῦ ἐν ἑκατέρῳ τὼφθαλμῷ.*

Could this have been written thus? *ἔσται εὐδαιμονέστατος ἣν ἔχῃ . . .*

A passage in the Phaedo, 72 B C, which is too long to quote, contains a number of imaginary conditions expressed in Form γ which could not possibly be converted into Form β without being felt to be incompatible with the argument. Compare also Phaedrus 245 D. The necessity of the employment of Form γ to express conditions of this character is implied, moreover, by such passages as that in ARIST. Rhet. iii. 10, 7: *ὥσπερ Περικλῆς ἔφη, Τὴν νεότητα ἀπολομένην ἐν τῷ πολέμῳ οὕτως ἠφανίσθαι ἐκ τῆς πόλεως, ὥσπερ εἴ τις τὸ ἔαρ ἐκ τοῦ ἐνιαυτοῦ ἐξέλοι,* and such as the hopeless wish of the slave in ARIST. Pax 21, *πόθεν ἂν πριαίμην ῥῖνα μὴ τετρημένην*; though in these the condition is only suggested.

I come now to the particular statement in Professor Goodwin's paper which I venture to think erroneous. He quotes two or three times the English proverbial expression, "If the sky falls, we shall catch larks"; and on one occasion he says (p. 64) that if we translate it into Greek we must use *ἐάν* and the Subjunctive (Form β). Now I grant, of course, that the nearest Greek equivalent to that collection of English words, no regard being had to the matter, would be the form he names. But if any one who used the English line were asked to explain his meaning he would certainly interpret it by "if the sky should (*or* were to) fall, we should catch larks," and not by "if the sky shall fall, we shall catch larks." And it seems to me that the form the expression has taken in English has been determined by the use that is made of it. For it is, I think, always employed with the purpose of making it clear to some one that he has been flattering himself with a hope which depends upon conditions practically impossible, or

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excessively improbable; and therefore the repartee is expressed for rhetorical effect in precisely the same form as that in which the hope was couched. However this may be, I feel convinced that it would never have been expressed by a Greek (unless indeed he was speaking after the manner of a prophet) in the form which the Professor assumes to be the correct one; and I think this will be evident to all, if the line be rendered into Greek in the three modes open to us for future suppositions. Thus:

Form α:

εἰ δὴ πεσεῖται τοὐρανοῦ γ' ὁ κύτταρος,
τἀρνίθια ληψόμεσθα.

Form β:

ἢν δὴ πέσωσιν οἰρανοί, μάλ' εὐχερῶς
τἀρνίθια ληψόμεσθα.

Form γ:

εἰ δὴ πέσοιεν οὐρανοί, μάλ' εὐχερῶς
τἀρνίθι' ἂν λάβοιμεν.

Now it seems to me that, of these, Form γ alone expresses what is really implied by the English proverb; that Form α might be employed for the same rhetorical purpose as that which has, in my opinion, determined the form of the English expression; but that Form β involves a consciousness of the possibility of realization which would have prevented any Greek from using it, unless indeed he was speaking as a prophet.

The conclusion which I draw from this examination is, that when a future supposition is made in such a matter as compels the consciousness that it cannot be realized, εἰ with the Optative (Form γ) is the form *necessarily* employed. This region is that governed by the unchanging laws of the physical universe; and, while on such a question I wish to speak with all possible deference to the greater learning and wider reading of others, I venture to express a strong opinion that no case can be adduced from the best writers in which a future supposition demanding for its fulfilment *a violation of physical laws* is expressed by ἐάν with the Subjunctive (Form β). I do not affirm that none such can be found with εἰ and the future

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Indicative (Form *α*); for, as I have before said, I consider that when the Indicative is used in both clauses of the Hypothetical Period, all consideration of the matter is left out of sight, and the possibility of the realization of the condition is neither imagined nor anticipated; and, therefore, as any sort of future supposition may conceivably be expressed by *εἰ* with the future Indicative, it is possible that some passages may be adduced which really suppose a violation of physical laws and yet have not the Optative. I have not, however, myself lighted upon any such. In regard, then, to future suppositions, I assume as a fixed limit on the side of improbability a supposition of the violation of natural law, and this, I believe, is always expressed by *εἰ* with the Optative (Form *γ*).* Then in cases which come short of this, exactly in proportion as the writer or speaker wishes to leave his supposition in the region of the ideal, whether from a consciousness of its extreme improbability or from a modest and courteous understatement or withdrawal of his own opinion, in that proportion is he likely to use this same form; while in all cases when he either feels or wishes to express his belief that his supposition will be realized, or that at least *time will show* whether his anticipation is well grounded or not, he will employ *ἐάν* with the Subjunctive (Form *β*). If this conclusion is correct, it must, I conceive, be agreed that the forms in question differ from each other, not in the degree merely in which they possess vividness or any other quality, but in kind and essentially.

It is manifest that upon the view here maintained, there must be a large number of cases which admit of being stated in both ways without any very important, or at least any very striking, difference. One of these Professor Goodwin in his

* An example of a supposition, not indeed physically impossible, but so improbable that it may practically be regarded as impossible, is in Xen. Anab. iii. 2, 34. *οἶδα γὰρ ὅτι καὶ Μυσοῖς βασιλεὺς πολλοὺς μὲν ἡγεμόνας ἂν δοίη, πολλοὺς δ' ἂν ὁμήρους τοῦ ἀδόλως ἐκπέμψειν· καὶ ὁδοποιήσειέ γ' ἂν αὐτοῖς, καὶ εἰ σὺν τεθρίπποις βούλοιντο ἀπιέναι.* It is not credible that if Xenophon had said, *ὁδοποιήσει γε αὐτοῖς, καὶ ἐὰν σὺν τεθρίπποις βούλωνται ἀπιέναι*, his hearers would have merely felt a greater amount of vividness in the statement of the supposition. It is plainly inconceivable that he could have so expressed himself.

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paper (p. 70) refers to, by way of showing that "the essential distinction is merely one of vividness of expression or distinctness in the form of the supposition, entirely apart from any difference of the speaker's opinion." As this passage seems to me a good one to illustrate what I have just said, I shall venture to quote it at length. It is in DEM. Phil. i., § 14 (p. 43). He has been urging upon the Athenians the necessity of action; he asks them what they are waiting for; what they expect to hear; and then he says: *τέθνηκε Φίλιππος; οὐ μὰ Δί', ἀλλ' ἀσθενεῖ. τί δ' ὑμῖν διαφέρει; καὶ γὰρ ἂν οὗτός τι πάθῃ, ταχέως ὑμεῖς ἕτερον Φίλιππον ποιήσετε, ἄνπερ οὕτω προσέχητε τοῖς πράγμασι τὸν νοῦν· οὐδὲ γὰρ οὗτος παρὰ τὴν αὑτοῦ ῥώμην τοσοῦτον ἐπηύξηται ὅσον παρὰ τὴν ἡμετέραν ἀμέλειαν. καίτοι καὶ τοῦτ' εἴ τι πάθοι καὶ τὰ τῆς τύχης ἡμῖν ὑπάρξαι, ἥπερ ἀεὶ βέλτιον ἢ ἡμεῖς ἡμῶν αὐτῶν ἐπιμελούμεθα, καὶ τοῦτ' ἐξεργάσαιτο, ἴσθ' ὅτι πλησίον μὲν ὄντες ἅπασιν ἂν τοῖς πράγμασι τεταραγμένοις ἐπιστάντες ὅπως βούλεσθε διοικήσαισθε.* Professor Goodwin asks in reference to this passage: "Did Demosthenes imply that there was any nearer prospect of decision on the question of Philip's death when he referred to it in the words *ἂν οὗτός τι πάθῃ*, than when he repeated his supposition in the very next sentence in the form *εἴ τι πάθοι?*" I should answer: Certainly not; but the reason of his passing from one form of the condition to the other is perfectly clear notwithstanding. Demosthenes has just referred to the report of Philip's sickness; and with this consideration in his mind, with the consciousness of the existence of a cause adequate to produce a certain effect, he naturally makes use of that form of the Hypothetical Period which suggests that the speaker has in view "an *anticipation* of the possible realization" of the condition: "If this sickness shall really prove one unto death, you will, I fear, with your supine inactivity soon make another Philip for yourselves; for it is more through your inertness than through his own strength that he has grown so great." Demosthenes then looks at the matter in a more general way, without any notion of the occurrence of Philip's death as being actually not unlikely, and contemplates it merely as an ideal matter, with merely "an *imagination* of the possible realization" of his supposition, and in

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consequence employs a different form of the Hypothetical Period: "And yet look at this: if he were to die, if fortune were to play into your hands in this way, how easily would you, if, as I advise, you were on the spot with a competent force when affairs there were in confusion, manage matters to suit yourselves." It appears to me that the distinction here suggested is one which lies on the face of the Greek, and which accords perfectly with the import of these forms as manifested in numberless other passages.

In these remarks on the thought implied by the two forms of condition in question, I do not imagine that I have attributed to them any other import than that *intended* to be expressed by the phraseology which has been employed by the writers on Greek Grammar referred to by Professor Goodwin. I conceive that I have only suggested a means of testing whether there does really exist between them a distinction in essence and fundamental, or whether they differ from each other merely in regard to "vividness" of expression. This word seems to me to be sadly in need of elucidation; and I shall be glad if what I have said may induce Professor Goodwin to add to the great services he has already rendered to students of Greek by clearing up the obscurity which I find in it.

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V.—*On Verb-Reduplication as a Means of Expressing Completed Action.*

BY ALONZO WILLIAMS,

FRIENDS' SCHOOL, PROVIDENCE, R. I.

It is a matter of no little surprise that in all that has been written upon Indo-European Philology during the last thirty years, we can nowhere discover any full treatment of Verb-Reduplication. In the "Comparative Grammar" of Bopp, the "Compendium" of Schleicher, the "Moods and Tenses" of Curtius, and the "Doppelung" of Pott, we may find attempted and partial explanations of it, but nowhere can be found any full and satisfactory discussion of the rise, the function, and the history of this form. The tense-formations of later growth have been quite critically analyzed, and their origin and primitive significance have been determined with considerable accuracy; yet so little has hitherto been done upon this form by those best fitted to tell us of its history, and so many elements of yet doubtful origin enter into its composition, that it is with no little diffidence that we venture to lay before this Association the results of our examination of the subject.

It is not our purpose to discuss the whole subject of verb-reduplication, but to speak only of the *genesis*, the *history*, and the *decay* of reduplication as a means of expressing completed action, alluding to the general subject of reduplication only so far as it may serve to elucidate our more limited theme. For the sake of greater clearness we may at the outset be permitted to state what we hope in this paper to accomplish. We shall endeavor *first*, to explain the origin of this reduplicated form, and how it came to possess the signification of completed action; *secondly*, to note its rapid growth and extension; *thirdly*, to trace its subsequent history and decay, that is, to show to what extent this form lost its original signification of completed action and to what extent the form itself decayed; and *fourthly*, to show by what new forms it was afterwards wholly or in part supplanted. We shall be compelled to limit ourselves to a part

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of the Indo-European field, and shall, therefore, choose as the basis of this paper those branches of our family which best illustrate our subject—the Sanskrit, the Greek, and the Latin.

First, then, let us enquire into the *origin* of verb-reduplication. In all languages we may find abundant illustrations of the principle that the repetition of a root, stem, or word adds emphasis to the expression—a principle which extends to all parts of speech. In Sanskrit, for example, the root *lū* (Gr. λύ-ω) means 'to sever,' and *lolū* for *lulū*, 'to sever completely.' Even in adverbs and prepositions we find examples of it: e. g. *upari* (Gr. ὑπέρ) means 'up' or 'above,' and *uparyupari* (for *upari upari*) means 'higher and higher,' or 'wholly up,' or 'above'; while the word *adhas* on the contrary means 'down,' and *adhas adhas*, or by euphonic combination *adhōdhas*, means 'wholly down.' We discover an illustration of the same principle in the Latin personal pronouns, *meme*, *tete*, *sese*; and in the general relative *quisquis*, corresponding to the Sankrit *yas yas*, which, however, is usually accompanied by the correlative *sas sas* (as in Nalus v. 12, *yaṃ yaṃ hi dadṛiśe teshān tan tam meme Nalan nṛipam*, 'for whomsoever of these she looked upon, this one she thought to be prince Nalus'); also in the relative adjectives *qualisqualis*, *quantusquantus*, *quotquot*. We give these examples because the whole word is in each case repeated, and because the principle involved is evident. Hundreds of words might be easily adduced at the basis of which lies the same principle, words which, however, have undergone euphonic changes, so that they are not readily recognized as reduplications, and of which the original intensive force has been lost. In all such cases the original purpose evidently was to give increased emphasis to the expression.

Very early the primitive Aryan people began to employ this method of strengthening their verbs. In the mother tongue the reduplication consisted of nothing less than a repetition of the whole root; but in course of time the form began to decay, and in the different branches of the family we find only representative elements of the root repeated. The original reduplication, e. g., of *vid* 'to see' was *vid vid*, and to

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this was added the root of the personal pronoun *ma*, restricting the action of the verb to the first person. From this radical stage it passed into the agglutinative and became united as *vidvidma*. *Now* the first syllable may be called the reduplication, the second the root, and the pronoun the termination. The language afterwards passed into the inflectional stage, in which further changes and modifications were made, modifications which tended to distinguish the primary root, as the bearer of the meaning of the word, from the reduplication and the termination. Thus *vidvidma* became, by strengthening the root and by curtailing the reduplication and termination, *vi-vaid-a*. Thus the reduplication dwindled down to those representative syllables which we find in Sanskrit, Greek, and Latin.

This reduplicated form did not at the outset assume the functions of a perfect, i. e., a tense expressing completed action. It was simply a present, existing side by side with the simple present, but expressing, however, intensive action. This is the origin and explanation of those reduplicated presents which we find in Sanskrit, Greek, and Latin: e. g., Skr. *dadāmi*, Gr. δίδωμι; Skr. *dadhāmi*, Gr. τίθημι; Skr. *jajanmi*, Gr. γίγνομαι, Lat. *gigno*. All such were without doubt originally intensive verbs. Even in later times, when the Sanskrit formed new intensives, it always did so by reduplication, as if still recognizing this primitive method. The Greek also has not a few intensives of later origin formed in the same manner, as e. g. from the root φαν 'to shine' we get the Epic φανφαν or παμφαν, 'to shine brightly,' (παμφαίνησι, Il. v. 6); from πνυ 'to breathe,' ποιπνύω 'to puff' or 'breathe with exertion' (Il. 8, 219). We can readily see how these old intensive presents in the mother tongue would gradually assume the idea of completed action. Bopp says, and his remark is quoted and approved by Curtius in his Moods and Tenses: "Die Reduplicationssylbe bezweckt bloss eine Steigerung des Begriffs, gibt der Wurzel einen Nachdruck, der von dem Sprachgeist als Typus des Gewordenen, Vollendeten, im Gegensatze zu dem erst im Werden Begriffenen, noch nicht zum Ziele Gelangten, aufgefasst wird" (Vergleichende Gram-

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matik, s. 749). Schleicher in his Compendium says substantially the same thing: "Die function der verdoppelung ist stäts im algemeinen die der steigerung, welche aber ser verschidene, später gesonderte beziehungen umfasst, so z. b. die intensive und iterative beziehung, welche sich später in den verbis intensivis entwickelte; dise beziehung ist den reduplicierten aoristen noch deutlich warnembar. Die beziehung der dauer bezeichnet die wurzelverdoppelung in den reduplicierten praesensstämen; die der vollenteden handlung im perfectum" (Compend. der Ind. Ger. Spr. s. 716). Although they recognize this change of signification from intensive to completed action, yet they do not attempt to explain how this change may have occurred. Although Bopp's statement that "reduplication gives emphasis to the root which the spirit of the language regarded as a type of that which is done," enables us to conceive how this change may have come about, and though the mere mention of the authorities already cited may be sufficient on this point, yet we may be permitted to offer one or two suggestions in further elucidation of it.

In the first place, reduplication may imply completion from the fact that the repetition of an act implies that it has been already once done. We might illustrate this from the repetition of ἄλλος in such frequent use in Greek: e. g. ἄλλος ἄλλο λέγει, literally, 'another says another thing,' which implies that some one has already said something, and hence is properly rendered 'one says one thing, another says another thing.' This case is somewhat different, to be sure, but may it not serve to illustrate how a repetition may imply that the act has already been done, and thus connect with the repetition of a verbal-root the idea of a completed act? For the assertion that an act is taking place a second time is virtually an assertion that it has already taken place once.

Again, intensity of action, the original signification of this reduplication, also implies completion. No element of action is more indicative of completion than intensity. Whenever we see a man bending to a task with the utmost intensity, we say the work is as good as done. In the case of the verb, may the mind not have passed from the action itself over to

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the result, to the completed act suggested by this intensity, and thus the verbs of completed action have been derived gradually from these intensive verbs?

This then we take to be the origin of this reduplicated tense, a tense denoting present completed action, or as we call it a perfect tense. Moreover, this was, we assume, one of the earliest, if not the very earliest form made use of by the primitive Aryan people for expressing the relation of time, for no other tense is so simple in its structure nor gives evidence of a greater antiquity, except perhaps the uncompounded aorist, the so-called second aorist in Greek, the aorist in *am* in Sanskrit. All the other tenses bear evidence of later formation, many even of having been formed on separate Indian, Hellenic, or Italian ground. This form, however, must have become fully established as a tense for denoting completed action before the original separation of the family, since we find it bearing this signification in the earliest literary records of each of the branches, Old Indian, Old Bactrian, Grecian, Latin, German, and in the Celtic (remnants). The Letto-sclavic alone has preserved no trace of it. This form, moreover, must have already passed through the radical and agglutinative into the inflectional stage before the separation; for in the oldest records of each of the branches we find it already reduced to the same or nearly the same form that it presents in the classical periods.

Let us now briefly trace its subsequent history in the Sanskrit, the Greek, and the Latin.

I. In *Sanskrit*. The Sanskrit inherited from the mother tribe the above method of forming the perfect tense, a tense which had already become distinguished in both form and meaning from the class of intensives from which it took its rise. In regard to it two assumptions may with apparent safety be made. *First*, in the earliest period of the history of the Sanskrit-speaking people this reduplicated form was the only one used for expressing completed action. Other forms sprang up later, as we shall see, but they all bear evidence of having been formed on Indian ground. *Secondly*, at this early period also this form had probably the signification of completed

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action only, and did not until later assume those other functions which it performed in its subsequent history. For, had it already taken on its later offices while the language was one, we should expect to find evidence of such use in the early Greek also. Very early, however, it began to lose gradually its own proper signification, and with decay of form dwindled down in meaning to a mere past tense in narration. This had gone on to such an extent that, although the reduplicated form was preserved in constant use in the latest literary period, yet its prevailing signification in the classical era was not that of a perfect but of an aorist. The three preterit tenses—the imperfect, the aorist, and the perfect—seem to have been handled very capriciously, and in their use no apparent distinctions seem to have been observed.

We next have to ask what new forms arose to assume the functions cast off by the reduplicated perfect? For never since the Aryan people first formed the conception of completed action have they once surrendered it, but they have always had some form, either synthetic or analytic, by which to express it. The Hindus supplied its place by several new formations, and to these we wish now to direct your attention. For sake of clearness they may be spoken of under six different heads.

1. Very early there arose what Sanskrit grammarians call the Periphrastic Perfect, formed by making of the verb root an abstract noun in *ām*, and affixing to this the reduplicated perfect of one of the auxiliary verbs, *as* 'to be,' *bhu* 'to be,' or *kṛi* 'to make' or 'to do.' Thus of *īś* 'to rule' is formed the abstract noun *īśām*, and to this is added the perfect *āsa*, *bahūva*, or *ćakāra*, giving *īśāmāsa*, *īśāmbabhūva*, or *īśāmćakāra*, the first two of which may be rendered 'I have been ruling,' and the last 'I have done ruling' or 'I did rule,' using the verb 'to do' as the Germanic branch did at a later date for the formation of a similar compound past tense. Here in each case the idea of a perfect lies in the reduplicated auxiliary verb. This was the method of forming the perfect of roots beginning with a long vowel and of those of more than one syllable, including derivatives, such as causals, desidera-

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tives and frequentatives. The purpose was evidently to avoid the ambiguity connected with the reduplication of a long initial vowel, and the difficulty of reduplicating polysyllabic stems. We may trace this form back to its very origin—a thing we are rarely able to do in the history of a verbal form. It occurs for the first time in the Atharvan, confessedly by far the most modern of the four Vedas, and here it occurs but once (*gamayām ćakāra*, A. V. 18, 2, 27). Wherever those verbs, which in later Sanskrit require this form, are found in the earlier Vedas, they always have the simple reduplicated perfects.

2. Usually when the completion of an action is to be expressed we find an analytic form, a perfect participle in *tas* (Greek τος, Latin *tus*) used with the present of the verb *as* 'to be' (Greek ἐσ-τί), and the agent expressed by the instrumental case. Thus to say 'Thou hast seen Nalus' we should have *Nalas tvayā dṛishṭas asti*, or by euphonic combination, *Nalas tvayā dṛishṭo 'sti*, 'Nalus by thee having been seen is,' equivalent to the Latin *Nalus a te visus est*. The auxiliary, however, is seldom expressed, and we find the above in Nalus ix. 29, *Nalas tvayā dṛishṭas*. This form, as well as that in *tus* in Latin, probably acquired the signification of a perfect somewhat in the following way. The demonstrative pronominal ending *tas* added to the root of a verb expresses the result of its action and implies that the action is already finished. Thus *dictum* in Latin expresses the result of the root *dic*, and *dictum est* means 'there exists the result of the root *dic*,' or in other words 'the saying has already occurred,' or 'it has been said.' Again *amatus est* means 'he is a loved object,' a result of the action of the root *am*, implying that the action has already been exerted, i. e. some one has loved him and he is now an object loved, or 'he has been loved.' And how often we meet these perfects passive when we are in doubt whether to translate them as presents or perfects, 'he is loved' or 'he has been loved.' They both amount to the same thing. In this manner do we explain the origin of the perfect passive in Sanskrit. This analytic perfect is in constant use in classical Sanskrit in every species of composition.

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This perfect passive participle occurs, in fact, nearly as many times as all other verbal forms put together, used not only where it supplies the place of the indicative perfect, but as often where the context requires the auxiliary of other moods. The precise tense and mood is often left to be inferred from the context, making the whole structure of the sentence loose and indefinite, and often, to the Greek and Latin scholar, provokingly so. Indeed it is calculated to astonish one, after having spent many weeks, perhaps months, in endeavoring to master the numerous classifications and moods and tenses of the Sanskrit verb, to find how few are the forms he is destined to meet in his reading. The whole treatment of the verb, the very soul of a language, is bald indeed when placed beside that of the Greek and Latin, and in fact the whole language, as a mode of expressing thought, will not suffer a moment's comparison with either of these languages; and it is surprising that western scholars, misapprehending the true sources of its value to philology, have, in imitation of the extravagant expressions of that eminent Orientalist, Sir William Jones, asserted again and again its superiority in this respect to the classic tongues of Greece and Rome.

3. The perfect is rendered frequently by this same participle in *tas* in agreement with the subject of the verb—a construction which is not unknown to the Greek and Latin; but in the excessive use of compounds in Sanskrit, in which nouns, adjectives, prepositions, conjunctions, and participles are all dovetailed together, this use of the participle is so frequent, where in Greek and Latin we should find a perfect, that it is deemed worthy of a separate mention.

4. With neuter verbs this same participle is used in impersonal constructions. Thus to say 'Thou hast gone' we have *gatan tvạyā asti*, 'it has been gone by thee,' or usually without the auxiliary, as in the Episode Savitrī, v. 19, *gatan tvayā*. This use is similar to such Latin expressions as *ventum est*.

5. With neuter verbs the passive use of this participle is limited to the foregoing impersonal construction; but, unlike the Latin, these same participles in *tas*, of these same neuter

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verbs, are often employed personally with an active meaning. Thus this same expression, 'Thou hast gone,' may be rendered personally, *gatas asi* or by euphony *gato 'si*, equivalent and similar to the German *du bist gegangen*, as in Nalus xii. 13, we read: *kva nu rājan gato 'si? quone, rex! profectus es?* 'whither, O king, hast thou gone?' The last four forms are, it will be observed, of like origin, and are perfects by virtue of the participles, as already explained.

6. One other form remains to be noticed, and it is a case worthy of careful analysis. It is formed by a perfect active participle and the present of the auxiliary verb *as* 'to be.' This participle of the verb *kṛi* 'to do,' is *kṛitavān*, and *kṛitavān asmi* means 'I have done,' as in Urvasī we find *api dṛishṭavān asi mama priyām*, 'art thou having seen my beloved?' or 'hast thou seen my beloved?' Let us now analyze this form and see by virtue of what elements it has acquired this signification. It is composed of three elements, *kṛi* the verb root, *tas* the ending added to form the perfect passive participle, and *vān*. This latter comes from the suffix *vant*, nominative singular masculine *vants*, denoting 'possession,' which by the rules of euphony becomes *vān*, a change not unlike that by which in Greek the participle λυοντς by omission and vicarious protraction becomes λύων. This is often added to nouns to form adjectives of possession, e. g. *dhana* 'riches,' *dhanavān* 'one possessing riches,' 'a rich man.' Adding to this the stem of the perfect passive participle we get *kṛitavān*, which originally signified precisely what the individual elements of which it is composed mean, namely, the present possession of the object in the condition specified by the participle. But this participle in *tas*, as we have already shown, implies a past action viewed as completed, and the statement of the possession of an object in the condition of completion denoted by the participle came in time to be accepted as expressing the completed act by which it was brought into that condition. The basis upon which a perfect tense has been reared is not the element of possession, as some would seem to imply (see Schleicher's Compendium, § 218, ed. 1870), but rather, just as in the second class discussed, the idea residing in the par-

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ticiple. The same is true of those modern analytic perfect formations made up of the perfect passive participle and an auxiliary verb denoting possession; and *kṛitavān asmi* might be thus rendered *factum habeo*, *je l'ai fait*, *ich habe es gethan*, and *I have done it*. There is no mysterious virtue in this auxiliary *have* by the influence of which this phrase becomes a perfect. There has been in each case a transfer of the centre of gravity from the declaration of the condition of completion inherent in the participle to the declaration of the antecedent act implied in that condition. When once this formation had become established as an expression of completed action, and the step by which it attained this position had been forgotten, then the auxiliary laid aside its original functions as a separate part of speech, and, becoming a mere formative element, assumed the burden of representing the perfect tense, and by its aid there were formed from analogy other classes of perfects where etymological analysis would find only nonsense, as *uktavān asmi* 'I have said,' where there is no idea of possession, and as *bhūtavān asmi* 'I have been,' where not action, but simply state or condition is denoted.

Thus we have seven (or really four distinct) formations for expressing completed action in Sanskrit. We would not be understood to assert that all these changes took place chronologically as we have treated of them. Whether the reduplicated perfect first began to decay, to lose its signification, and these analytic forms in consequence sprang up to supply its place, or whether these analytic forms began to rise and usurp the functions of the reduplicated form, and this in consequence began to yield the field—which was the cause and which the effect, which the antecedent and which the consequent, we do not pretend to say; it is more probable that the two processes went slowly on side by side and are not to be sundered. We simply state the facts as found recorded in the literary records left us by the Sanskrit speaking people, classifying as we have simply for convenience and a more perspicuous presentation of the subject.

II. In *Greek*. The whole history of this form in Greek

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may be told in a very few words. The Greek inherited from the mother-tongue the method of forming a tense for completed action by reduplication and preserved it intact to a greater extent than any other branch of the family. Just two remarks are all that is called for under this head.

1. The Greek perfect has shown remarkable tenacity in holding to the idea of completed action. In this respect it stands unique in the history of the Indo-European verb. It has kept strictly within its own province, and has not, like the Sanskrit, dwindled down to a mere historic past, entering thus the domain of the aorist and assuming its functions.

2. Not only has the Greek reduplicated perfect kept its own province, but, on the other hand, it has allowed no other forms to enter and rob it of any of its functions, as the Sanskrit, which has been, as we saw, robbed of all its original possessions. Throughout all the periods of its history, from the earliest Epic to the latest Attic forms, it knows no other means of expressing completed action. Even the circumlocutory forms used in the moods of the middle and passive voice, and sometimes for euphonic reasons elsewhere, are, unlike the similar analytic perfects in Sanskrit and Latin, formed with a reduplicated participle in which lies the idea of completed action. Whatever then may be the explanations of the new forms in κ, and those with σ in the Middle Voice, we yet feel confident in stating that no element ever entered into the Greek verb to denote completed action except the reduplication originating as already explained.

III. In *Latin.* The Latin also, after its separation from the mother tongue, continued to form its perfects in the primitive way by reduplication. Unlike the Sanskrit and the Greek, however, where the form remained intact, here in Italic speech the form itself began early to decay, so that in the literary language we find only remnants of it. The verbs in which these remnants are found may be divided into four classes.

1. Some less than thirty verbs still retain the old reduplication, as *peperi*, *tutudi*.

2. About an equal number have a short stem vowel

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lengthened in the perfect, the result of a contracted reduplication: as *lĕgo, lĕlĕgi, lĕlĭgi, lĕĭgi, lēgi; vĕnio, vĕvĕni, vĕvĭni, vĕĭni, vēni.*

3. Somewhat less than fifty have the vowel unchanged in the perfect, being already long: as *cūdo, cūdi; īco, īci.*

4. The compounds of the above classes, which suffer some euphonic changes, complete the list of perfects in *i*. All of these are perfects by virtue of an original reduplication.

Let us notice now the new formations which sprang up to assume the functions of the perfect when this method had fallen out of use. We may speak of three classes.

1. Perfects in *si*, as *scrip-si, rexi* (*reg-si*), etc., about one hundred in number. Bopp was the first to explain these as compounds of *esi*, a perfect of the root *es*, 'to be.' This view has been quite generally accepted by scholars, but none have attempted to show by virtue of what this *esi*, and in consequence the forms compounded of it, became perfects. In his later writings Bopp himself struck these forms out of his list of perfects, but tried in vain, as it seems to us, to find some intimate relation between them and the Sanskrit aorist in *sam, sīs, sīt.* No attempt had been made to give a complete and satisfactory explanation of this form until last year, when, before this Association, Professor Harkness, in his critical paper "On the Formation of the Tenses for Completed Action in the Latin Finite Verb," presented an extended analysis of it based upon the theory that *esi* is itself a reduplicated perfect. No other theory that has been yet put forth can account for all the elements entering into this difficult and almost inexplicable form. Accepting this view, we explain the perfect in *si* as a perfect by virtue of the auxiliary, which is itself a reduplicated perfect of the root *es* 'to be'; and thus, as far as the element of tense is concerned, this form is not unlike the periphrastic perfect in *āsa* in Sanskrit.

2. Perfects in *vi* and *ui*, as *amavi* and *monui*, are regarded by all scholars whose authority we are accustomed to follow, as compounds of the auxiliary verb *fui*, and need only this mention from us. These again are perfects because the auxiliary is a perfect belonging to the *i* class and formerly

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reduplicated as already explained. These also, you observe, as far as the tense element is concerned, are not unlike the Sanskrit periphrastic perfects in *babhūva*, root *bhu*, Greek φυ, Latin *fu*.

3. The foregoing complete the list of synthetic perfects in Latin; but later there arose certain analytic forms which may be mentioned in this connection. (1). In the passive voice the perfect is expressed by the perfect passive participle in *tus* and the present of the verb *es* 'to be,' as *amatus est* or (of neuter verbs) *ventum est*. Here the perfect signification was acquired in the same manner as in the corresponding forms in *tas* in Sanskrit as already explained. In this expression a transfer of thought has taken place similar to that which the analytic forms denoting possession underwent. In the one case we have the predication of the present possession of an object in a certain condition, in the other the predication of the present existence of a subject in a similar condition, said condition in both cases implying the previous action. In neither case has the auxiliary—'to have' or 'to be'—had any influence whatsoever in raising the form to the rank of a perfect. As far as the auxiliaries are concerned, both forms would have remained a *present*. The basis upon which the idea of completed action has been reared is the condition denoted by the participle. Starting from the same point, both expressions by a like process have reached the same goal. This process has been more fully illustrated under the Sanskrit forms in *vān*. As to the question whether the Latin ever possessed a synthetic perfect passive, which was afterwards supplanted by this analytic form, it cannot be established by any proof drawn from Roman literature. As, however, the Sanskrit and the Greek possess such forms, we should infer that they existed in the mother-tongue before the separation, and that there was probably a time in the history of Italic speech when such a form was in use; but no trace of it has been left.

(2). There also arose, in both the active and the passive voice, a so-called periphrastic perfect, formed by the perfect *fui*, and in the active the future active participle, as *amaturus fui*, in the passive the gerundive participle, as *amandus fui*.

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These participles are used with the verb *esse* throughout all its moods and tenses. The perfects are perfects by virtue of the auxiliary.

(3). Still one other form appears, the prototype of the modern analytic form with *avoir* in French, made up of the perfect passive participle in agreement with the object and the present of the verb *habēre*. Thus in Cic. Div. 2, 70, 145, we read: *innumerabilia, quae collecta habent*, 'which they have collected.' This form was used, though sparingly, in all the periods of Latin literature and its rise may be explained precisely as that of those in *vān* in Sanskrit, to which it is similar.

In regard to the chronological development of these different perfect formations in Latin, we cannot, of course, determine with any degree of accuracy, as we have not here so extended a literary history as in the Sanskrit, throughout which we may trace the rise of new forms. In all periods of the literature we find all these forms used side by side, and without any apparent increase or decrease in the use of any one of them. The reduplicated forms are, without doubt, the most primitive; those in *si* seem to contain evidences of antiquity which entitle them to the second place, though *secundus longo intervallo;* those in *vi* and *ui* probably arose next, and the analytic forms would naturally be developed last.

In connection with the Latin perfect, we should call attention to the fact that all these forms have, besides the signification of the perfect, also that of an aorist. Whether the Latin originally possessed an aorist form like its two sister branches and afterwards lost it, and the perfect gradually assumed its functions, cannot be determined from the material at our command. From its earliest to its latest literary records, the Latin uses this tense with this two-fold signification. There is no doubt but that an aorist form had already become established in the mother-tongue before the breaking up of the family, and that the different branches at the separation carried away uses of it; but all, except the Sanskrit and the Greek, very early lost it.

Resumé. Of these three languages which received by inheritance the reduplicated perfect, we see then that: I. The

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Sanskrit, while preserving the form in use, has lost entirely its original meaning, and has developed three new and distinct forms: 1. The periphrastic perfects with *āsa*, *babhūva*, and *ćakāra*. 2. The analytic perfects with the perfect passive participle in *tas*. 3. The analytic perfects with the perfect active participle in *vān*.

II. The Latin has lost the form almost entirely, and has retained the signification only in part, while five new forms have appeared.: 1. Perfects in *si*. 2. Perfects in *vi* and *ui*. 3. The analytic perfects with the perfect passive participle in *tus*. 4. The analytic periphrastic perfects with the future participles and a perfect of the auxiliary. 5. The analytic perfects with the perfect passive participle and the auxiliary *habēre*.

III. The Greek discovers a most remarkable history, showing its superiority here as in all other parts of its verb. Throughout a long literary career it has preserved both its form and its signification entire.

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VI.—*A Grammatical Analysis of the Old English Poem, "The Owl and the Nightingale."*

By L. A. SHERMAN,

HOPKINS GRAMMAR SCHOOL, NEW HAVEN, CONN.

It is generally agreed that the author of this poem has left us his name in the character of the righteous umpire, Nichole of Guildeford; but when he lived it is impossible to determine within a century. The name of King Henry is once mentioned (line 1091), showing, in connection with other facts, that the poem cannot well have been written before the reign of the second sovereign of that title. For fixing the other limit to the possible period of its composition, but little is offered, either of suggestion or of proof. The number of words borrowed from the French does not exceed thirty. The author is no less a Saxon in sympathies than by birth, for he quotes only Alfred, and that no less than eleven times. But, on the other hand, he calls himself *Maister*, and is apparently a priest. The prejudice against the Saxons must, therefore, by his time, have largely disappeared.

The following analysis has been made from the edition of Stratmann, which shows the readings of the only two MSS. of the poem which have yet been found. The material has been taken from his emended text, except in instances where he has deviated from the reading of both MSS. to insert a form theoretically more original or correct. The peculiar forms admitted in such cases will be distinguished, those from the older Cotton MS. by C., the Oxford by A. Forms not in parenthesis are the reading of both.

NOUNS.

The Strong and Weak Declensions of the Anglo-Saxon are well preserved. The former differs but slightly from its primitive. The latter has shortened *-an* to *-e*.

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STRONG DECLENSION.

Masculines.

SING.	PLURAL.
N. dom	N. briddes
G. domes	G. ———
D. dome	D. briddes
Ac. dom	Ac. briddes

An ephelkystic *-e* is found in the nominative singular *swikelhede*, and the accusative singular forms *beore*, *godhede*, *hihte*, *hunde*, and *woȝe*.

The dative sing. occurs a few times the same in form as the acc., having lost the final *-e*. The nominative plural without *-s* is not found with words known to be masculine, but is seen in two instances of nouns doubtfully so: *Theȝ appel trendli from þon treowe.—Thar two ileove . . liggeþ.*

The genitive plural ends in *-e* or *-ene: þan elles hwar beon deovelene fere.*

A few datives or accusatives plural occur with the ending *e*: *And oþer clene stede þu schunest.—Hwane mon hoȝeþ of his scheve.—Ac na þe les mid alle his wrenche.—Ich habbe at wude treon wel grete mid þicke boȝe.*

In some instances further the number is doubtful, the nouns being possibly used generically or collectively: *The faucun ibefde his bridde.—Al þat þu miht mid clivre smiten.* (Both these nouns show the regular plural in *-s*.)—*And þe totorveþ and tobuneþ mid stave and stone.—Thu canst feler wike.—Hwar þu miht over smale fuȝele.*

In one instance a form occurs which is apparently a strong dative plural in *-en: That is bischopen muchel schome* (l. 1761).

Nouns of anomalous declension in Anglo-Saxon have the following forms:

SING.			PLURAL.	
N. broþer	G. freondes	D. fote	D. teþ	Ac. freond

Man is thus inflected:

SING.	PLURAL.
N. man	N. men
G. mannes	G. manne
D. manne, men	D. manne, men
Ac. man, manne	Ac. men

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Feminines.

The differences of case-formation will be best understood from the following comparative exhibit of words occurring in two or more cases.

SINGULAR.				PLURAL.			
N.	G.	D.	Ac.	N.	G.	D.	Ac.
amansing		amansinge					
bliss, blisse		blisse	blisse				
cheste		cheste	cheste				
		dede	dede			dede	
		lavedi		lavedies			
	milne	milne					
niht		nihte	niht	nihtes			nihtes
stefne		stefne	stefne				
sunne		sunne				sunnen	sunne
ule	ule	ule	ule				
wiht				wihtes, wihte			
					wise		
	worldes, worlde						

An inorganic *-e* is seen in the nominatives *blisse*, *cheste*, and *stefne*.

Of feminines of the A. S. anomalous declension there are the following forms:

SINGULAR.			PLURAL.		
G.	D.	Ac.	N.	D.	Ac.
bokes	boke	bok	mus	muse	mus
		burȝ			
		turf			

Neuters.

Those of most frequent occurrence are the following:

SINGULAR.				PLURAL.			
N.	G.	D.	Ac.	N.	G.	D.	Ac.
child				children		childre	
cun		cunne			cunne		
flesch	flesches	flesche	flesch				
hors		horse				horse	
hus	huses	huse	huse	huses			
maide		maide	maide	maide			
nest		nestè	neste				
		rise		ris		rise	
þing		þinge	þing	þinge		þinge	þing
wif	wives	wive	wif	wives			wive
word		worde, word	word	wordes		worde	wordes
wundor					wundre		

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An inorganic *-e* occurs once in the nominative: ***Ne mai his strengþe hit ischilde, þat hit nabuȝþ þe lutle childe*** (here added perhaps for rhyme only). In the accusative sing. it is seen in *huse, bile, imunde*. *Thinge* as a nom. plural occurs once only: *The mon mot . . . wite inoh of hwiche þinge cume*. There is one other similar form: *Wepne beoþ gode griþ to halde*.

From a comparative view of these paradigms we see the distinction of gender as expressed by form well nigh destroyed; neuters, and feminines as well, taking the masculine *-es* in the plural, and the feminines also in the genitive singular. In the dative singular the formative *-e* may be omitted, to the accusative it may be added, showing that the difference between the dative and accusative idea was about obliterated. In the mas. plural the same unification of these cases is noticed, but is strangely wanting in the neuters, no dative plural neuter in *-es* appearing in the poem.

WEAK DECLENSION.

All cases in both numbers show the ending *-e*, and for all genders. The following words occur, all of the A. S. weak declension.

SINGULAR.				PLURAL.			
N.	G.	D.	Ac.	N.	G.	D.	Ac.
ape						attercope	
				blostme			
		burne					
	chirche	chirche					
				crowe			
		deme					
		dwole	dweole				
				fere			
			fihte				
			fode				fiȝe
		folde					
		frogge					
		gare					
		grome	grame				
hare							
harp		harpe	harpe				
heorte	heorte	heorte	heorte				
				hine			
			hoȝe				
			imene				
iwune							
lilie							
		lichome					

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SINGULAR.				PLURAL.			
N.	G.	D.	Ac.	N.	G.	D.	Ac.
		linde					
		loke					
		masse	masse				
necke							
		nome					
						netle	
oxe							
		onde					
rose							
				schine			
		side					
sop-sage							
			spure				
			dai-steorre			steorre	steorre
		sticke					
		sweore					
			teone				
bed-time		time					
tunge		tunge					
		þrote	þrote				
		weole					
		wille					
		wlate					
wrecche							
wrenne							

The neuter *eȝ*, 'eye,' has the following forms: acc. sing. *eȝ*, nom pl. *eȝen*, *eȝe*, dat. pl. *eȝen*, *eȝe*, acc. pl. *eȝen*, *eȝe*: *Theos ule heold hire eȝen neoþerward.—That ut berste bo þin eȝe.*

The neuter *treow*, 'tree,' has: nom. pl. *treon*, dat. pl. *treo* and *treowe*, acc. pl. *treon*. This word is always strong in A. S., and perhaps received its weak endings from identity of form with *treow*, 'faith,' which is weak.

The paucity of genitive forms in both declensions is partly due to the use of the dat. with *of* in its place: *Thu bodest ferde of manne oþer þeoves rune.—Hwi niltu singen to men of Galeweie.*

THE ADJECTIVE.

The adjective receives the endings of both the strong and the weak declension, or their representatives. The strong retains its distinctive features only in the nominative and genitive singular, the other cases being for both declensions marked in common by *-e*, or in the strong stand without endings. The weak shows *-e* in all cases.

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STRONG DECLENSION.

Singular.

Nominative.—The adjective closely follows the Anglo-Saxon nominative form, and in only two or three cases shows *-e* where it would not be found in Saxon: *For ȝif aht man is hire ibedde.—Uvel strengþe is lutel wurþ.* With added *-e*: *In one bure þat hire was boþe stronge and sure.—Hwanne snow liþ wide.*

Genitive.—The regular A. S. ending *-es* is found only in the pronominal *oþres*, which occurs four times: *To oþres mannes bedde.* Two instances occur of weak forms substituted for strong: *In so gode kinges londe.—Of sume freondes rure.*

Dative.—The dative takes *-e*: *It was iseid in olde laȝe.—Bi þeostre nihte.—Of selliche wisdome.* The pronominals *al* and *oþer* are frequently indeclinable, except *oþres* in the gen. sing., as above.

Accusative.—The masculine adjectives show the bare stem, like the nominative, but nearly as frequently take *-e* or the regular *-ne*: *He schuneþ þat hine ful wot.—Al þat werieþ linenne cloþ.—Ich wot hwo schal fulne deþ afonge.* The only adjectives which take *-ne* are *ful*, *god*, *riht*, and *sum*.

The feminine adjectives take *-e*, but may omit it: *Ich habbe gode answare.—For me hi halt loþlich and fule.* Of cases like the latter there are not more than three or four.

Neuters, bare stem, two or three times *-e*: *Ich habbe bile stif and stronge.*

Plural.

The genitive plural with full ending *-re* is found in two* adjectives only: *Hit is alre wundre mest.* This form occurs eight times. *The laverd . . . fareþ ut on þare beire neode.* Simple *-e* is also found. *Hit is a wise monne dom.—Hit is gode monne iwune.*

The nom., dat., and acc. pl. end alike in *-e* without exception, except *sum*, and *oþer*, and *al*, as above. *Theȝ eni god man to heom come, so hwile dude sum from Rome.* In a single

* Add the numeral *two*, gen. pl. *tweire*. Cf. *numerals* at end of pronoun.

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apparent exception, *Gode clivres scharp and longe*, the final *-e* of *scharpe*, was probably not written because it was not pronounced before the following initial vowel. *Eni* and one are followed by strong forms: *Eni god man.*

WEAK DECLENSION.

The adjective takes *-e* for all cases in both numbers.

Nominative.—That ilke best.—Theos riche men.—That gode wif.—Alle þine wordes:

Dative.—Hire wise tunge.—Thare longe tale.

Accusative.—Let þane lutle fuȝle nime.—Ne mai þat þridde no man bringe.

COMPARISON.

The scheme is scanty.

POSITIVE.	COMP.	SUPERL.
blipe	blipure, (blipur, C.)	
god	betere, (beter, A.) bet, 21-23.	
briȝt	briȝter	
fair	fairer	
glad	gladdre	
gret	grettere	hecst
icunde	icunder	
lutel	lesse	
milde	mildre	
muchel	more, mo	mest
neh		necst
rad	raddere	
soft		softest
strong	strengur	
uvel	worse	worst
	Adverbs.	
wel	bet	best
er	erur	erest
faste	fastre	
heȝe	herre	
ilome		ilomest
late	later	
longe	lenger, leng	
	les	
muchel	more, mo	mest
raþe	raþere, (raþre A.)	
uvele	worse	

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The comparative forms are sometimes indeclinable, sometimes take *-e* for all cases: *Of brihter heowe, of fairer bleo.—For I am wisure þan he.—Grettere is þin heved.* Of the superlatives *worst* is a weak form: *And eiþer seide . . . þat alre worste þat hi wuste.*

PRONOUNS.

Personal.

SINGULAR.

N. Ich, ic, i (ihc, ih, C.)	N. þu
G. min, mi, (my seolve, A.)	G. þin, þi
D. me	D. þe
Ac. me	Ac. þe

DUAL.

N. ———
G. unker
D. and Ac. ———

PLURAL.

N. we (we A.)	N. ȝe (ye, A.)
G. ure	G. ower (oure, eure, eur, A.)
D. us	D. ow, eu (ou, C.)
Ac. us	Ac. ow

SINGULAR.

Masculine.	*Feminine.*	*Neuter.*
N. he	N. heo, ho, he	N. hit
G. his	G. hire	G. his
D. him (heom, A.; hom, C.)	D. hire	D. him
Ac. hine, him, heom	Ac. hi, heo, hire	Ac. hit

PLURAL.

N. hi, heo
G. heore, hire (here, hore, C.)
D. heom, him (hom, C.)
Ac. hi, heom, heo (hom, C.)

The form *ho*, nom. fem., occurs once in A. (936), but is frequent in C., where *eo* is generally written *o*. *He* for *heo*, fem. nom. sing., is twice found alike in both A. and C. (1381 and 1560), once in A. when not in C. (19), and six times in C. when not in A. (141, 393, 401, 469, 936, 1638).

The genitives are used as possessives, once or twice particularly: *Hwi neltu . . . schewi hweþer unker beo.—And mai ure eiþer hwat he wile, mid rihte segge.* They are found indeclinable, even when connected with a plural noun, and with about the same frequency as the inflected forms. The

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latter differ from the former only by an appended *-e*, found even in the nominative sing. but rarely. *Min* and *þin*, however, show traces of the older declension: *Ich an wel, cwaþ þe nihtengale, Ac, wrenne, noht for þire tale, Ac do for mire lahfulnesse.*

THE ARTICLE.

(A. S. *se, seo, þät.*).

SINGULAR.

Masculine.	*Feminine.*	*Neuter.*
N. þe	N. ——	N. þat
G. þes, þas	G. þare	G. þes, þas
D. þan, þen	D. þare	D. þon
Ac. þane	Ac. þare	Ac. þat

PLURAL.

N. þeo (in one occurrence, þo C., heo, A. [843])
G. þare? (140; c. f. lines 3 and 4)
D. þan
Ac. ——

The is only used once pronominally: *And þe oþer ne can sweng bute anne, and þe is god wiþ eche manne.* It is used generally instead of the declined forms, as an article, like the modern *the*. It occurs about forty times as an instrumental in such cases as *Heo was þe gladre for the rise*, and is used seven times as a relative: *Swo heo doþ . . . þe bute neste goþ to brode.* Elsewhere the indeclinable *þat* performs the office of the relative, and shares that of the article. The other inflected forms are used as pronouns and as articles with about equal frequency.

The nom. pl. *þeo* is found but once alike in both A. and C. (1675).

A. S. *þes, þeos, þis.*

SINGULAR.

Masculine.	*Feminine.*	*Neuter.*
N. þes	N. þeos (þos, C.)	N. ——
G. ——	G. ——	G. ——
D. þis	D. ——	D. þisse
Ac. þis	Ac. (þeos, A., þos, C.)	Ac. þis

PLURAL.

N. þeos (þos, C.)
G. ——
D. ——
Ac. þeos, (þos, C.)

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Hwo.

MASCULINE.	NEUTER.
N. hwo (wo, wa, C.)	N. hwat
D. hwam	D. hwan (wan, C.)
	Ac. hwat (what, wat, C.)

There is no appearance of this pronoun as a relative.

The following pronominals occur: *Al; ech; eni; euch; eiþer* (*aiþer*, C., *eyþer*, A.); *ever euch, evrich; aȝen, oȝen; oþer; hweþer; hwich, hwuch; ihwat; swich, swuch, þilk.* Once the combination *eni man so ever*, (1474).

These cases of the use of *seolf* are found: *The sulve sottes.—Thu sulf. The sulve pope.—Him sulve.—My seolve* (A., *mi*, C).—*Heom seolve.—The seolve.—The seolve coc.*

An shows the forms *a, an, on, one, no* in the nominative and accusative. They are used without reference to gender: *An ule and one nightingale.* With masculine accusatives *anne* (*nanne*,) is found a few times: *Sum blind mon þat nanne rihtne wei ne con.* In the dative *ore* is found a few times, but is used apparently without regard to the gender of the following noun: *In ore waste þicke hegge.*

Only these numerals are met with:

N. tweie, two		
G. tweire	þridde	hundred
D. twam		

THE VERB.

Voice.—The passive voice is formed by joining *beon* with the past participle. In place of *beon*, *wurþan* is used a few times: *I schal do þat þi speche wurþ forwode.—Nu hit schal wurþe wel isene.*

Mood.—There are four moods, the Indicative, Subjunctive, Imperative, and Infinitive. For the latter the gerund may be employed, that is to say, the infinitive may or may not be introduced by *to*: *Hit is unriht and gret sothede*, To *misdon one gode menne, and his ibedde from him spanne.—Thu þohtest . . mid faire worde me biswike.*

Tense.—The present and preterit tenses are formed by inflection, the perfect and pluperfect by the aid of *habbe* and *hadde*, and the future by *schal* or *wille* with the infinitive.

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There are two conjugations, the Strong and the Weak. The former forms the preterit by change of the root vowel, the latter by the addition of *-de* or *-te* to the verb-stem as affixes.

The past participles end, for the strong verbs in *-en* or *-e*; for the weak in *-ed* or *-d* (*-t*).

STRONG CONJUGATION.

Endings.

INDICATIVE.

Present.		*Preterit.*	
Sing.	*Plural.*	*Sing.*	*Plural.*
1. -e ——	1. -eth	1. ——	1. ——
2. -est, -st	2. -eth	2. -e	2. ——
3. -eth, -th	3. -eth	3. ——	3. -en, -e

SUBJUNCTIVE.

Present.		*Preterit.*	
Sing. -e	Plural, -en, -e	Sing. -e	Plural, -e

IMPERATIVE.

Sing. —, e Plural, -eth, -e*

INFINITIVE.

-en, -e

PARTICIPLES.

Pres. -inde Past, -en, -e

The verbal forms following are given according to the class of their primitives in the Anglo-Saxon. The classification is that of Heyne.

Reduplicational Verbs.

SCHEME.

Class.	*Pres.*	*Pret.*	*P. Part.*
1	a	eo	a
2	ae, e	e	ae
3	ā	ē	ā
4	—		
5	o	eo	o

Class 1.

Inf.	*Pres. Ind.*	*Pret.*	*Past Partic.*
falle	falleth	——	ifallen
holde	holdest	heold	iholde

* When nominative pronoun follows.

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Class 2.

Inf.	*Pres. Ind.*	*Pret.*	*Past Partic.*
lete	leteth	let	——
rede	rede	raddest	——

Ich nolde don that thu me raddest.

Class 3.

——	croweth	——	——
——	(hattest, passive)	——	——
sowe	soweth	——	isowe

Class 5.

blowe	——	——	iblowe
wepen	wepeth	——	——

Ablaut Verbs.

SCHEME.

Class.	*Pres.*	*Pret.*	*Pret. Pl.*	*P. P.*
1	i	a	u	u
2	i, e	a, ä	e	u, o
3	1	å	i	i
4	eo	ea	u	o
5	a	o	o	a

Class 1.

Inf.	*Pres. Ind.*	*Pret.*	*Pl.*	*P. P.*
——	——	——	——	ibunde
bringe	bringeth	(brohte)	——	(ibroht)
berne	forbernst	——	——	——
clinge	clinge (2d sub. s)	——	——	——
——	drinketh	——	——	——
findan	findest	——	——	ifunde
——	ginneth	——	——	——
——	——	ȝal	——	——
singen / singe	singeth	song	sungen	——
springe	springeth	——	——	isprunge
——	thringe (3d sub. s)	——	——	——
——	——	——	——	ibolȝe
——	——	——	——	idorve
fihte	fiht	faht	——	——
helpe	helpeth	——	——	——
urne	urneth	——	——	——
——	——	swal	——	——
weorpe	weorpeth	warp	——	——
wurthe	wurth	——	——	iworthe
——	forbredeth	——	——	forbrode
ligge	liggeth	——	——	——
	berste (pl. sub.)	——	——	——

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Class 2.

Inf.	*Pres. Ind.*	*Pret.*	*Pl.*	*P. P.*
cume	cumeth	com	——	icume
nimen	nimeth	nom	——	inume
——	——	——	——	ibore
breke	——	——	——	ibroke
——	bereth	——	——	——
ete	eteth	——	——	——
ȝive	ȝiveth	ȝaf	——	iȝive
——	cwath	——	——	icwede
——(seon)	sith	seȝ	——	isene
——	——	underȝat	——	——
speke	specth	speke, (sub.)	——	ispeke
stele	——	stal	——	——
——	awreke (sub., pl.)	——	——	——

Class 3.

abide	abideth	abod	——	——
abite	——	——	——	——
chide	chid	(chidde)		
drive	driveth	——	——	——
grede	gredeth	(gredde)	——	igrad
——	rideth	——	——	——
——	schrichest	——	——	——
slide	——	——	——	——
——	sniuth	——	——	——
slide	——	——	——	——
smite	——	——	——	——
——	stigth	——	——	——
——	swiketh	——	——	——
——	tihth	——	——	——
wite	witest	——	——	——
——	writ	wrot	——	——

Class 4.

beode	beod	bede (2d sing.)	——	——
cheose	——	——	——	——
creope	creopth	——	——	——
fleo	flihth	——	——	——
leosen	forl-eost	forles	——	——
——	luteth	——	——	——
——	bi-luketh	——	——	——
teo	——	——	——	bi-toȝe

Class 5.

drahe	draheth	——	——	idraȝe
fare	fareth	for	——	ifare
——	to-schaketh	——	——	——
——	——	——	——	islaȝe
spanne	——	——	——	——
——	stont	stod	——	——

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Paradigm.

Singen, to sing.

INDICATIVE.

Present.		*Preterit.*	
Sing.	*Pl.*	*Sing.*	*Pl.*
1. singe	1. ——	1. ——	1. ——
2. singest	2. ——	2. sunge	2. ——
3. singeth	3. singeth	3. song	3. sungen

SUBJUNCTIVE.

Present.		*Preterit.*	
Sing.	*Pl.*	*Sing.*	*Pl.*
1. singe	1. ——	1. sunge	——
2. singe	2. ——	2. ——	——
3. singe	3. singe	3. ——	——

IMPERATIVE.

No forms.

INFINITIVE.

singen, singe

PARTICIPLE.

Pres. singinde *Pret.* ——

IMPERATIVE.

leten, to let.

Sing. 2. lat *Pl.* 2. lateth, lete we

WEAK CONJUGATION.

Of these verbs there are two classes. Those belonging to the first class affix the endings *-de*, *-te*, without change of the root. The second class changes the root-vowel.

The following are the most important verbs of both classes:

Class 1.

Inf.	*Pres. Indic.*	*Pret.*	*P. P.*
lere	lere	lerdest	——
ihere	ihereth	iherde	iherd
——	——	ferde	——
——	hupth	hupte	——
sette	——	sette	——

Class 2.

buggen	——	a-bohte	
don, do	deth, 3d s., doth 3d pl.	dude	ido
bi-thenche	thencth	thohte	ithoht
thinche	thincth	thuhte	——

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No preterital form has been observed which adds *-ede*, i. e., shows a connecting vowel between root and preterit sign.

Beon.

INDICATIVE.

Present.		*Preterit.*	
Sing.	*Pl.*	*Sing.*	*Pl.*
1. am	1. ——	1. was	1. ——
2. art	2. ——	2. were	2. ——
3. is (beoth)	3. beoth (both, C.)	3. was	3. were

SUBJUNCTIVE.

Present.		*Preterit.*	
Sing.	*Pl.*	*Sing.*	*Pl.*
1. ——	1. ——	1. were	1. ——
2. bęo	2. ——	2. were	2. ——
3. beo	3. beon, beo	3. were	3. weren, were

IMPERATIVE.

Sing.	*Pl.*
2. beo	2. beoth

INFINITIVE.

beon, beo

The form *beoþ*, for the 3d sing. of the pres. indic., occurs five times: *Hwone þi lesing beoþ unwroȝe* (848. The other examples may be found in lines 296, 670, 1385, 1468).

PRETERITIVE VERBS.

An.

PRES. INDIC.

1. sing. (an, C.; unne, A.) Line 1739.

Ah.

PRES. INDIC.

3. sing. āh (auh, A.) Line 1471.

Can.

INDICATIVE.

Present.		*Preterit.*	
Sing.	*Pl.*	*Sing.*	*Pl.*
1. can	1. ——	1. ——	1. ——
2. canst	2. ——	2. ——	2. ——
3. can	3. cunne, can (1324)	3. cuthe	3. cuthe

SUBJUNCTIVE.

Present.		*Preterit.*	
Sing.	*Pl.*	*Sing.*	*Pl.*
1. cunne	——	1. ——	——
2. ——	——	2. ——	——
3. cunne	——	3. cuthe	——

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Dar.

INDICATIVE.		SUBJUNCTIVE.	
	Present.		
Sing.	*Pl.*	*Sing.*	*Pl.*
1. dar	1. ——	1. ——	——
2. darst	2. ——	2. ——	——
3. dar	3. dar	3. durre	——

Preterit wanting for both modes.

Mai.

INDICATIVE.

Present.		*Preterit.*	
Sing.	*Pl.*	*Sing.*	*Pl.*
1. mai, may	1. ——	1. mihte	1. ——
2. miht, maist	2. ——	2. mihtest	2. ——
3. mai	3. muȝe	3. mihte	3. mihte

(For the 2d sing. present C. has also *miȝt*, *miȝst*, while A. shows *maist*, *mist*, *myht*).

SUBJUNCTIVE.

Present.		*Preterit.*	
Sing.	*Pl.*	*Sing.*	*Pl.*
1. muȝe	1. muȝe	1. ——	1. mihte
2. ——	2. ——	2. ——	2. ——
3. muȝe	3. muȝe	3. ——	3. ——

Mot.

INDICATIVE.

Present.		*Preterit.*	
Sing.	*Pl.*	*Sing.*	*Pl.*
1. ——	1. ——	1. ——	——
2. most	2. ——	2. ——	——
3. mot (mod, C.)	3. mote	3. moste	——

Mote, 2d sing. pres. once occurs (9872) : *Ever mote þu ȝolle and wepen.*

SUBJUNCTIVE.

Present.	
Sing.	*Pl.*
1. mote	1. ——
2. mote	2. ——
3. ——	3. moten

Preterit wanting.

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Schal.

INDICATIVE.

Present.		*Preterit.*	
Sing.	*Pl.*	*Sing.*	*Pl.*
1. schal	1. ——	1. scholde	——
2. schalt	2. schule	2. scholdest	——
3. schal	3. schule, schulle, (schulleth, A. 1133)	3. scholde (solde, C.)	——

SUBJUNCTIVE.

Present.		*Preterit.*	
Sing.	*Pl.*	*Sing.*	*Pl.*
1. schulle, schille	1. ——	1. scholde, schulde	1. scholde
2. ——	2. ——	2. ——	2. scholde
3. schule	3. schule	3. scholde	3. scholde, (solde, C.)

Thearf.

INDICATIVE.

Present.

Sing. 3. tharf

Willan.

INDICATIVE.

Present.		*Preterit.*	
Sing.	*Pl.*	*Sing.*	*Pl.*
1. wille, wile, nelle	1. ——	1. nolde	——
2. wilt, nelt, wult	2. wulle	2. woldest	——
3. ——	3. willeth	3. ——	——

SUBJUNCTIVE.

Present.		*Preterit.*	
Sing.	*Pl.*	*Sing.*	*Pl.*
1. ——	1. ——	1. wolde	1. ——
2. wille	2. ——	2. ——	2. ——
3. wille	3. wille	3. wolde	3. wolde

Witan.

INDICATIVE.

Present.		*Preterit.*	
Sing.	*Pl.*	*Sing.*	*Pl.*
1. wat, wot	1. ——	1. wiste	1. ——
2. { wost, witest, nustest	2. nute	2. ——	2. wiste
3. wot	3. nuteth, (nute, C.)	3. wiste	3. ——

SUBJUNCTIVE.

Present.	
Sing.	*Pl.*
1. ——	——
2. wite	——
3. ——	——

Preterit wanting.

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INFINITIVE.
witen, wite.

A few first persons occur of the pres. indic. sing., in which the verb-stem, ending in a vowel, does not take *-e*; as *Ich warni men; Therof ich wundri; Ich beginne on heh*, and *endi laȝe*. But the *-e* may be assumed: *Thanne ich pleie* and *singe*.

In the second person sing. of the same tense and mode such combinations as *etestu*, *witestu*, are frequent.

The third person also shows contracted forms, as *stiȝþ*, *spenþ*, *wenþ*. When the verbal root ends in a dental it often stands without the ending -þ, or even without showing, by euphonic alterations, that it was ever added: *Hwan he cumeþ ham eft to his wive. . . . He chid and gred swuch he beo wod, and ne bringþ hom non oþer god.—For he nis noþer ȝep ue wis, þat longe abid þar him neod nis.* So *beod*, *bid*, *þuster*, *understond*, *wend*, etc. In other instances euphonic changes prove previous contraction: *The ȝeorne bit and sikeþ sore.* So *arist*, *falt*, *mist*, and *west* (*wecsþ*).

Of the present participle there is one example: *Wenest þu hi bringe so lihtliche To godes riche al singinde.*

The past participle of strong verbs, with the infinitive of both classes, has very generally weakened the final *-en* to *-e*, as will be noticed in the examples given above. The past participle of weak verbs shows once or twice only the appended *-e* of declension: *Heo hadde þe speche so feor forþ iladde.* In no case is this *-e* found added to a strong participle with the *-en* retained.

Noticeable are a few adjectives formed in modern fashion through the medium of denominative verbs, or in other words by adding *-ed: Thi bile is stif and scharp and hoked, Riht so an owel þat is croked.—Artu ihoded?—Theo þe haveþ bile ihoked and clivres wel icroked.*

THE ADVERB.

Use of the Negatives.

The simple negative *ne*, unaccompanied by another negative

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particle in the same sentence, occurs ninety-five times. It was observed doubled in the same sentence twice only.

Ne, *na*, or *ne*, *no* are found forty-one times.

Ne, *noht*, occur forty times.

Ne, *never*, twenty-eight times.

Noht, alone, eight times.

Nowhit, once.

Ne, *noþer* are found five times.

Three negatives, two of them compound words, are not infrequent: *Nis noþer noht þi lif ne þi blod*, 'Neither thy life nor thy blood amount to aught.'

PREPOSITIONS.

A is found frequently, thirty-five occurrences: *And song a feole cunne wise.*

Buve = above, is found twice.

To fore = before, is also found twice.

CONJUNCTIONS.

The following are common: *Ac*, thirty-five times; *boþ*, *and*; *bute*; *oþer*; *oþer*, *oþer* (*Hwone ich iseo arise feorre, Oþer dairim oþer dai-steorre*). *Ne* (nor); *noþer*, *ne*, six times; *hweþer*, *þe*, five times.

GENDER.

Nouns in the main retain the gender of the same in Anglo-Saxon. The following are the correspondences and exceptions of those nouns to their A.-S. primitives, which appear in connection with the personal pronoun of the third person, or with the masculine accusative ending *-ne* of the adjective.

Masculines.

All masculine proper names, and the noun *man*, are of course represented by *he* in all cases.

CORRESPONDENCES.

Natural (with Epicenes).	*Grammatical.*
Faucun (French word, mas.) he.—Havec, he.—Hare, he.—Cheorl, he.—Cat, he.—Fox, he.—Thes hundes (gen.)—Fuȝol, him, (m. or n.,) but thane (acc. sing.)—Coc, he.	Drem, he.—Song, he.—Red, hine.—Wrenche, godne.—Deth, fulne.—Wei, rihtne.—Lust, he.—Dom, rihtne.—Cwed, sumne.

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Feminines.

Natural (with Epicenes).	*Grammatical.*
The words *ule* and *nightingale* are always represented by *heo, hire,* or *hi,* save in two instances, where *he,* doubtless by a blunder of the copyist, is employed (cf. personal pronoun). Mose, hire.—Henne, heo.—Lilie, hire.—Rose, hire.—Lefdie, hi.	Stefne, heo.—Mur3the, heo.—Heorte, heo.—Luve, heo.—Speche, theos.

Neuters.

Word, hit.—Flesch, hit.—Child, hit.—Gome, hit.—Bispel, hit.—Unriht, hit.—Neste, hit.—Thing, hit.—Wit, hit.—Blod, hit.—Lond, hit.	Hors, hit.

DISAGREEMENTS.

Stoc, m., hit.—Swikeldom, m., hit.—Either ure (O. and N.) he.—Mur3the, f. hit.—Lepe, m., hit.—Wif, n. heo, hire.—Harm, m., hit.—Geongling, m., hit, heo.—Wrenne, m., heo.—Brid, m., hit.—Maide, heo.—Stunde, sumne.—Brother, hit; (but see connection, 118).

Note.—It has been found impracticable in the printing to represent uniformly the use in the text of the characters for the *th* and *w*. The MS. A. generally shows *w*, but C. the A.-S. character. Both, however, employ *þ*.

An erratum occurs on page 30 of the Proceedings, line 6 from bottom: *þah* should be *þat*.

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PROCEEDINGS.

SEVENTH ANNUAL SESSION,

HELD AT NEWPORT, R. I., JULY, 1875.

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AMERICAN PHILOLOGICAL ASSOCIATION.

NEWPORT, R. I., Tuesday, July 13, 1875.

The Seventh Annual Session was called to order at 3 o'clock P. M., in the hall of the Rogers High School, by the President, Dr. J. Hammond Trumbull, of Hartford, Conn.

An address of welcome was made by the Hon. Samuel Powel, Chairman of the Local Committee, to which the President replied.

The Secretary presented his report, announcing that the persons whose names follow had been elected members of the Association:

Professor John Binney, Berkeley Divinity School, Middletown, Conn.; Mr. W. F. Bradbury, High School, Cambridge, Mass.; Mrs. N. W. DeMunn, Providence, R. I.; President J. M. Gregory, Illinois Industrial University, Champaign, Ill.; Professor George O. Holbrooke, Trinity College, Hartford, Conn.; Mr. Albert H. Hoyt, Boston, Mass.; Mr. J. C. M. Johnston, New Haven, Conn.; Professor D. B. King, Lafayette College, Easton, Penn.; General Albert G. Lawrence, Newport, R. I.; Mr. U. W. Lawton, Jackson, Mich.; Mr. D. P. Lindsley, Andover, Mass.; Professor J. J. Manatt, Denison University, Granville, O.; Professor John Meigs, Lafayette College, Easton, Penn.; Mr. Augustus C. Merriam, Columbia College, New York City; Rev. S. M. Newman, Taunton, Mass.; Mr. C. M. O'Keefe, 45 Willoughby St., Brooklyn, N. Y.; Mr. Wm. T. Peck, High School, Providence, R. I.; Mr. Leonard W. Richardson, Trinity College, Hartford, Conn.; Professor W. G. Richardson, Central University, Richmond, Ky.; Dr. Julius J. Sachs, New York City; Professor Francis W. Tustin, University at Lewisburg, Penn.; Mr. G. H. White, Amherst College, Amherst, Mass.

The Treasurer presented his report, showing the receipts and expenditures of the past year to be as follow:

RECEIPTS.

Balance in treasury, July 15, 1874,	$417.98
Fees of 26 new members,	130.00
Annual assessments,	545.00
Interest,	50.32
Donation from citizens of Hartford,	84.27
Sales of Transactions,	97.38
	$1,324.95

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EXPENDITURES.

Printing Transactions, 1873,	$267.75
Printing Proceedings, 1874,	164.90
Postage, express, and stationery,	24.70
Secretary's expenses,	35.50
	$492.85
Balance in treasury,	832.10
	$1,324.95

An investment of $500 is not included in the balances of this abstract.

On motion, Professor Charles H. Brigham and Mr. Charles J. Buckingham were appointed Auditors of the Treasurer's report.

On motion, it was

Resolved, That the Association gratefully acknowledge the receipt of $84.27, the generous contribution of citizens of Hartford; and that 50 copies of the volume of Transactions recently published be placed at the disposal of the Secretary for distribution to contributors to the fund of the Local Committee at Hartford.

Professor S. S. Haldeman, of the University of Pennsylvania, Philadelphia, Penn., read a paper on "An English Consonant-mutation, Present in 'proof, prove.'"

In 'proof' and 'prove,' a surd consonant indicates a noun or an adjective, and a sonant indicates a verb. More than one hundred examples of a similar interchange were given: e. g., 'advice' and 'advise,' 'bath' and 'bathe,' 'belief' and 'believe,' 'gilt' and 'gild,' 'grip' and 'grab,' 'practice' and 'practise' ('practize' in Spencer), 'purpose' and 'propose,' 'teeth' and teethe,' 'wife' and 'wife.' Such pairs as 'give' and 'gift' do not belong here, the *f* being due to the participial *t*, which is also present in 'descent' (from 'descend') and many others. Some verbs, as 'bequeathe,' 'crave,' are not accompanied by surd nouns. Many words are used as both nouns and verbs without a change of form: as 'slide,' 'scoff,' 'exercise.' In some cases a change of form would cause confusion with other words: as in 'cease' and 'seize,' 'loose' and 'lose,' 'dose' and 'doze.'

The Secretary read a paper by Professor Edward S. Holden, of the United States Naval Observatory, Washington, D. C., on "The Number of Words Used in Speaking and Writing English."

For my purpose I define a *word* to be a symbol printed in capital letters in Webster's Dictionary, edition of 1852.

In turning over the leaves of a dictionary one meets with three classes of words: 1st, those which one is certain truly belong to him and are constantly used in writing and speech; 2d, those which one might use in writing or very formal conversation, but which it requires a moment's consideration to determine to include or not to include in one's vocabulary; and 3d, those rare or extraordinary words which one unhesitatingly rejects. It is to be noted, however, that technical words

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are not all in this last class, although a large part of this class is composed of them. In counting the number of words in the dictionary which are properly to be included as in habitual use, one's natural tendency is to include too many of the second class spoken of, that is, too many words whose meaning is perfectly well understood, which would be intelligible if met with in reading, and which yet might not be used in a life-time. I have sedulously endeavored to avoid this tendency; and, indeed, I have gone over many of the pages previously examined, finding not more than one *per cent.* of words wrongly marked as my own.

In the unillustrated edition of Webster's Dictionary (1852) there are 1281 pages of defined words. By actual count, 33 selected pages were found to contain 2383 words, giving an average of 72.2 words to a page, and making the estimated number in the whole book 92,488. Then in sixteen different places, so selected as to give as nearly as possible an average number of words, the number used was found to be 1599 out of an estimated total of 4420. This would give 33,456 words in my vocabulary.

An estimate, based on Mrs. Clarke's Concordance to Shakespeare shows that his vocabulary (with the important omission of all verbs which are spelled like nouns) contained over 24,000 words. Similar estimates give over 17,000 for the number of words used by Milton in his Poems, about 7200 for the number in the Authorized Version of the Bible, and about 12,000 for the number of those which occur in the Anglo-Saxon Chronicle.

The estimate made by the Hon. George P. Marsh, that an intelligent man uses in speaking and writing less than 10,000 words, is based on a definition of a *word* different from that which I have adopted. He counts as one all forms which have the same simple or stem, making, for instance, 'lover,' 'loveless,' and 'lovely,' only one word; I have counted all the forms which occur in the list that is given in the dictionary.

A resolution of the Directors of the Redwood Library and Athenæum, extending the privileges of their rooms to the members of the Association, was presented, and the thanks of the Association were returned for the same.

A recess was then taken until 8 o'clock.

Evening Session.

The Association met in the Unitarian Church, Professor S. S. Haldeman, Vice-President, in the Chair.

The Annual Address was delivered by the President, Dr. J. Hammond Trumbull.

The true student of knowledge is ready to acknowledge himself, with Paul, a "debtor both to the Greeks and to the barbarians." No apology seems necessary for calling you, for a time, away from the beaten paths of classical philology to the vast, half-explored regions on the frontier of language, where are heard only the strange tones and uncouth idioms of savages. Hundreds of these idioms are scarcely known even by name, to linguistic scholars. Yet there is not one of them that might not, if thoroughly investigated, make some valuable contribution

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to the science of language. American scholars cannot too often be reminded how rapidly tribe after tribe is passing away; how many American dialects have, in the last two centuries, disappeared, leaving no trace; how little has been done and how much remains to do for even a provisional classification of all the languages of the western continent. To the so-called "dead languages" of the old world, letters and the art of writing assured survival. The speech of Homer and Aeschylus, of Virgil and Cicero—however marred by modern utterance—is immortal. The language of Egypt is as enduring as her pyramids: Thoth, the god of letters, watched over its long sleep, until in the fullness of time came the unsealing. The Semitic empires of Mesopotamia, and even (if we accept M. Lenormant's determination of the Accadian) their Turanian predecessors, are yet speaking by their incised records. But to an *unwritten* language, when it dies, comes no possibility of resurrection.

The number and variety of American languages seem, at first view, more remarkable than the approximation to uniformity in plan of thought or general structure which establishes among them all a certain family likeness. No accurate enumeration of these languages has been or can be made. Their number has been variously estimated; and one estimate is as good as another, where none can rest on sufficient data.

Is there any bond of union between these innumerable languages, which seem to be radically unlike? Are there characteristic features testifying to the original unity of all, or which at least may serve to distinguish them all, as a class, from languages of the eastern world? The answer must be less confidently given now than it was fifty years ago. As the range of observation widens, broad generalizations are seen to be hazardous. Scholars must be content to rest for the present in Mr. Gallatin's conclusion, that though he perceived and was satisfied of the similarity of character in the structure of all known American languages, he could not define with precision the general features common to all. No morphological classification yet proposed finds a place for these languages to the exclusion of all others. Many of them are as truly *inflective* as the Semitic or the Indo-European. No definition of an inflectional language has been found which can exclude the Algonkin while including the Hebrew. The modification of the root by varying vocalization is as well-marked a feature of the one language as of the other. The inflection by internal change, which makes Arabic *qâtil* 'killing' from *qatala* 'he kills,' is of precisely the same character as that which in the Chippewa (an Algonkin dialect) makes *nēshiwed* 'killing,' from *nĭshiwi* 'he kills.' Their separation as a class cannot be established by morphological characteristics. There is a general likeness, but it is in their plan of thought, not in their methods of combining the elements of words or annexing formatives to roots. It is the constant *tendency* to synthesis, rather than the means by which its expression is effected, which characterizes American speech. This tendency is found in all American languages, and, so far as is known, is found in the same degree nowhere else. It manifests itself as plainly in a primary verb as in the 'agglutination' of a dozen syllables.

It may almost be affirmed that Indian speech, pronouns and a few particles excepted, is all *verb*. Every word may be conjugated by moods and tenses, every so-called noun has its preterit and future, its indicative and subjunctive modal qualifications; and every synthesis, however cumbrous, may be regarded as a conjugation-form of a compound verb. The subjective element is as dominant

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in Algonkin as in Aryan speech. The Indian's first thought is self, his next of those 'like' or 'unlike' himself. His impressions of the outer world are received through his desires and appetites. External objects are conceived in their relation to self. His name for *man* is 'like self,' for *woman* 'one who follows,' for *father* 'one from whom self comes' (literally, 'I am *from* him'), for the preternatural 'something beyond' self—*manito*—and this word, very generally employed by missionaries as a name for God, in Algonkin dialects, is in fact formed as a *verb*, from a *participial* of an earlier verb of which the root signifies 'to go beyond,' 'to exceed.'

As every so-called adjective or noun may be conjugated as a verb, from which verb may be formed again, nouns designating the actor, the action, the instrument, etc., and as the formation of every such verb-noun is regular, so that every new name is self-defining, there is absolutely no limit to the possible enlargement of any Indian language. The ease with which, in the principal North American tongues, new words have been framed for new objects and ideas—the formation being always in strict accordance with structural laws—gives ample proof that these languages "have within themselves the power of progressive improvement, whenever required by an advance in knowledge and civilization."

In the devious mazes of American linguistics, it is easy to lose one's way and forget the time. Returning homeward, to say something about a language in which members of the Association have a more direct and selfish interest than in the Algonkin—a language which, in spite of the predictions of Noah Webster, that a "future separation of the *American* tongue was necessary," Americans still love to call *English*—the subject of the proposed reform of spelling was discussed.

There are indications of increased interest in this subject. The popular mind seems awake, as never before, to appreciation of the difficulties, eccentricities, and absurdities of the present standard-English cacography. The remarks of Professor March, in his address to the Association, last year, have been extensively copied, and apparently meet very general approval. Professor Whitney's discussion of the question "How shall we spell?" has helped expose the weakness of the stereotyped objections urged against reform. Legislators are beginning to look at the subject from the economic point of view, as related to popular education, and are considering how much bad spelling costs the country per annum. A bill is now before the legislature of Connecticut for the appointment of a commission to inquire and report as to the expediency of employing a reformed orthography in printing the laws and journals. The "spelling matches" which, last winter, became epidemic, had their influence, by bringing more clearly to popular apprehension the anomalies of the current orthography, and disposed many to admit (with Mr. A. J. Ellis) that "to spell English is the most difficult of human attainments."

Among scholars, there is little difference of opinion on the main question, Is reform of the present spelling *desirable?* The objection that reform would obscure etymology, is not urged by real etymologists. "Our common spelling is often an untrustworthy guide to etymology," as Professor Hadley averred; and Professor Max Müller's declaration that, "if our spelling followed the pronunciation of words, it would in reality be of greater help to the critical student of language than the present uncertain and unscientific mode of writing," receives the nearly unanimous assent of English scholars.

Equally unfounded is the objection that words, when decently spelled, would

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lose their "historic interest." The modern orthography is, superlatively, *un*-historical. Instead of guiding us to, it draws us from, the "well of English undefyled." The only history it can be trusted to teach, begins with the publication of Johnson's dictionary.

The greatest obstacle to reform is the want of agreement among scholars as to the best mode of effecting it. What seems an improvement to one, is regarded by another as an undesirable innovation, or, perhaps, as a new deformity. Few men are without a pet orthographical prejudice or two, and the more unreasonable these are, the more obstinately they are held fast.

Perhaps the most that can be hoped for, at present, is some approximation to general agreement, as to the words, or classes of words, for which an amended spelling may be adopted, concurrent with that which is now in use. A list of words "in reference to which present usage in the United States or in England sanctions more than one way of spelling," is prefixed to Webster's and Worcester's dictionaries. A similar list, prepared under judicious limitations, exhibiting side by side the present and a reformed spelling—and an agreement of prominent scholars, in England and America, that the use of either form shall be recognized as allowable spelling—would go far towards ensuring the success of reform.

It is in compliance with suggestions repeatedly made, and from various quarters, that this subject has been brought to the consideration of the Association. It is for you to decide whether it is advisable to take any action for promoting and directing the popular movement for reformed orthography.

On motion, the thanks of the Association were offered to the President for his address.

The Association thereupon stood adjourned to 9 o'clock Wednesday morning.

Wednesday, July 14—Morning Session.

The Association met at the High School at 9 o'clock, the President in the chair.

The Secretary reported the election of new members:

Rev. Samuel J. Andrews, Hartford, Conn.; Rev. Homer T. Fuller, St. Johnsbury, Vt.; Professor Richard T. Greener, University of South Carolina, Columbia, S. C.

The Auditors reported that they found the Treasurer's report correct, and it was, on motion, accepted.

On motion, it was

Resolved, That a committee of three be appointed by the President, to whom shall be referred so much of his annual address as treats of a reformation of English spelling.

Professor Francis A. March, Professor S. S. Haldeman, and Professor Lewis R. Packard, were appointed such committee.

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Dr. George R. Entler, of Franklin, N. Y., read a paper on "A Comparative View of the Language of Deuteronomy and Jeremiah."

The purpose of the paper was to make a comparison of the grammatical forms, syntactical arrangement, and style of the two books, and to show that the results of such a comparison were opposed to a theory that they both had the same author. For instance: נְאֻם יְהוָה never occurs in Deuteronomy, but is found frequently in Jeremiah; the phrase יְהוָה צְבָאוֹת never occurs in the whole Pentateuch as expressive of the true God, but is employed often in Jeremiah. Also נְאֻם יְהוָה appears in Jeremiah at the beginning of a verse, while אָמַר יְהוָה stands at the end of a verse. The reason assigned for the interchange of these two words is based on their meanings. The former means 'to murmur,' 'to mutter,' 'to speak in a low voice,' being especially used of the supernatural voice which was supposed to whisper oracles in the ear of the prophet. It corresponds to the Greek *μύω* 'to be closed,' 'to be shut,' especially used of the lips and eyes, which is connected with the Sanskrit root *mu* 'to bend,' *mukas*, Latin *mutus, musso, mutio*. It corresponds also to the Arabic *nama* 'to speak in a low voice.' Gesenius, in his "Thesaurus," controverts Fürst, who derives it from the Sanskrit *nam* 'to bend.' Benfey gives one meaning of the word as 'to sound,' but says that there are no authoritative references. The verb אָמַר corresponds to the Greek *φημί*, which belongs to the root ΦA, whence come also *φάος*, *φαίνω*, and means 'to bring to light,' 'to utter,' 'to say.' Hence אָמַר introduces what is to be said (Numb. v. 12; vi. 2; xv. 2). This explains the use of the infinitive לֵאמֹר (LXX. *λέγων, λέγοντες*), as a formula of quotation, particularly after verbs of announcing. The phrase חֵלֶק יַעֲקֹב, a title of God, never occurs in Deuteronomy. בְּתוּלַת יִשְׂרָאֵל in Deuteronomy means an Israelitish virgin (A. V., 'damsel,' Luther and DeWette, '*Dirne*'); in Jeremiah it means the whole people. The phrase עַמִּי is found twenty-eight times in Jeremiah; it occurs also in all of the books of the Pentateuch, except Deuteronomy. So also terms applied to the land and people of Israel are different in the two books. Also, the worship of idols or of strange gods is never forbidden in Deuteronomy under a prohibition of "offering incense" to them, which is often found in the prophet. Jeremiah says, "the Levites, the priests"; in Deuteronomy we find "the priests, the sons of Levi." In Jeremiah the use of the infinitive absolute followed by the finite verb with the conjunction וְ is of frequent occurrence and characteristic; in Deuteronomy it is very rare. In Jeremiah the article with the preposition לְ stands several times instead of the accusative-sign אֵת. Aramaic words, meanings, inflexions, terminations, and constructions are common in Jeremiah, but altogether wanting in Deuteronomy, except in chapters xxxii. and xxxiii. The parallelisms between the two books may be accounted for by the prophet's familiarity with the earlier writings, and his quotations from them and references to them.

After giving an analysis of many expressions used by both writers, the speaker noticed the contrast between Jeremiah and Isaiah. He spoke of the retiring disposition of Jeremiah, and of his likeness to Martin Luther in two respects, dis-

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trust of himself and melancholy, which latter was natural to one who experienced the decay of all hopes for the restoration of national prosperity, and who was accused by those whom he wished to serve. The speaker drew a parallel between Dante and Jeremiah. Both combated authorized teachers of religion, and both were sustained by the hope of blessedness which shall hereafter prevail on earth.

Professor Albert Harkness, of Brown University, Providence, R. I., read a paper on "The Formation of the Tenses for Completed Action in the Latin Verb."

Esi, carpsi, cecini, fui, alui, and *amavi,* represent all the varieties of Perfect Formation known to the Latin language. They are inflected as follows:

1.	2.	3.
es-i,	carp-s-i,	cecin-i,
-isti,	-s-isti,	-isti,
-it,	-s-it,	-it,
-imus,	-s-imus,	-imus,
-istis,	-s-istis,	-istis,
-erunt *or* -ere.	-s-erunt *or* -s-ere.	-erunt *or* -ere.

4.	5.	6.
fu-i,	al-u-i,	ama-v-i,
-isti,	-u-isti,	-v-isti,
-it,	-u-it,	-v-it,
-imus,	-u-imus,	-v-imus,
-istis,	-u-istis,	-v-istis,
-erunt *or* -ere.	-u-erunt *or* -u-ere.	-v-erunt *or* -v-ere.

The most cursory examination of these forms reveals the fact that the endings *i, isti, it,* etc., on the one hand present the most remarkable peculiarities, entirely without a parallel in any other tense in the language, while on the other hand they preserve the most unvarying uniformity throughout all classes of Latin verbs, being precisely the same in the latest derivative as in the earliest primitive. This fact renders it almost certain that they have a common origin in all Latin verbs.

But only three of our representative examples are really independent forms. The others are compounds of auxiliaries—*carp-si* of *esi, al-ui* and *ama-vi* of *fui.* We may therefore dismiss these compounds for the present from our discussion. Moreover *esi* has been already examined in a previous paper, in which we reached the conclusion that it was derived from *asasma,* the original of the Sanskrit *âsa.* In the Latin, *asasma, asasta,* etc., became *esismi, esisti,* etc., finally shortened in the classical period to *esi, esisti, esit, esimus, esistis, eserunt* or *esere.* The steps by which this was effected were all explained. We noticed the disappearance of *s* before *mi* and *mus,* the dropping of the ending *mi* with the lengthening of the preceding *i* in the first person singular. We observed also the disappearance of *s* before *t* in the third person singular. We thus reached in that paper a very simple and natural explanation of the peculiar endings of the Latin perfect in the auxiliary *esi* and its compounds; i. e., in all perfects in *si* and *xi.*

But how are these endings to be explained in *fui* and *cecini*? In *esi,* shortened from *esismi,* the final *i,* as we have already seen, is the remnant of the simple root *es,* with the personal ending *mi.* In the same manner the endings *isti, it, imus, istis,* and *erunt,* all consisted originally of the personal endings added to the root

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es. If, then, these endings have a common origin in all Latin verbs, it follows as a matter of course that *fui* and *cecini* are formed from *fu-ismi* and *cecin-ismi*, as *esi* is formed from *esismi;* i. e., that they contain the present of the auxiliary *es*, *esmi* = *sum*. Indeed I scarcely see how it is possible to look at such forms as *fu-is-ti*, *fu-is-tis*, *fu-er-unt* = *fu-is-unt* and *cecin-is-ti*, *cecin-is-tis*, *cecin-er-unt* = *cecin-is-unt*, without recognizing the root *es* as an element in the formation, as it lies there entirely undisguised between the principal root and the personal endings.

The fact that this view is not directly supported by the analogy of the perfect formations in the Sanskrit and Greek is a matter of little importance, inasmuch as it is fully supported by the analogy of an entire class of other tense-forms in both those languages. In the use of the auxiliary, *cecini*, as explained above, is entirely analogous to the Sanskrit *a-dik-sham*, and the Greek ἔδειξα.

Our discussion seems to authorize the following conclusions:

I. The Latin, in common with all the cognate tongues of the Indo-European family, inherited a reduplicated perfect, formed by appending the ordinary personal endings to the perfect stem, which was the root reduplicated. Among these primitive perfects was that of the auxiliary, originally *asasma*, which became in the Latin *esismi*, *esisti*, etc., finally shortened in the classical period to *esi*, *esisti*, *esit*, etc. Thus were produced in the auxiliary the peculiar endings of the Latin perfect. This, the original type of the Latin perfect, has been preserved only in *esi*.

II. At a very remote period the Latin formed a compound reduplicated perfect by appending the auxiliary *es* to the perfect stem. Thus, *cecin-ismi*, *cecini*, *cecin-eram*, *cecin-ero*, etc. To this class belong all Latin perfects in *i*.

III. The Latin finally formed a new compound perfect by appending the perfect of the auxiliary to the verb-stem, rarely to the present-stem. Thus:

1. Most consonant stems appended the auxiliary *esi:* as *carp-si*, *carp-s-eram*.

2. *A*, *e*, and *i* stems, with some consonant stems, appended the auxiliary *fui:* as, *ama-vi*, *dele-vi*, *audi-vi*, *al-ui*.

Professor W. G. Richardson, of Central University, Richmond, Kentucky, read the next paper, on "Statistics as to Latin Pronunciation in American Colleges and Universities."

Last winter the Bureau of Education, at Washington, (Gen. John Eaton, Jr., Commissioner,) instituted some inquiries with the view of ascertaining the usage of American Colleges. Two hundred and forty-nine colleges had responded. The speaker had been charged with tabulating the results of this correspondence, so as to give, as far as possible, the present status of Latin Orthoëpy in this country as well as in England, Germany, and France. For the information of Latinists, and with the concurrence of the Bureau, he presented the following statistics. He expressed the hope that his paper would not re-open the vexed question of orthoëpy. As a representative of the Bureau, he preferred to preserve an entirely neutral attitude, and to prepare a report which should impartially present every phase of the subject.

The pronunciation of Latin is here classified according to well-known principles, as "English," "Continental," or "Latin" (the last word being used in the same sense as "Roman"). The two hundred and forty-nine colleges are here arranged according to the location, and then according to the pronuncia-

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tion adopted. Of the whole number, 37 per cent. use the "English," 32 per cent. the "Continental," and 31 per cent. the "Latin."

NEW ENGLAND STATES.	
English,	10
Continental,	1
Latin,	2
MIDDLE STATES.	
English,	14
Continental,	11
Latin,	16
SOUTHERN STATES.	
English,	19
Continental,	18
Latin,	16
WESTERN STATES.	
English,	48
Continental,	42
Latin,	37
PACIFIC STATES.	
English,	4
Continental,	7
Latin,	4

Many colleges which are here classified as using the "English" or the "Continental" pronunciation, also employ the "Latin" in teaching archaic forms or for philological purposes.

Mr. Alonzo Williams, of the Friends' School, Providence, R. I., next presented a paper on "Verb-Reduplication as a Means of Expressing Completed Action."

It was the author's endeavor, first, to explain the origin of this form, and how it came to possess the signification of completed action; secondly, to trace its subsequent history and decay, i. e., to what extent the form lost its original signification of completed action, and to what extent the form itself decayed; and, in connection with this, to show by what new forms it was supplanted.

I. Genesis. In all languages we find illustrations of the principle that repetition of a root adds emphasis to the expression; Sanskrit *lû* 'to cut,' *lolûya* 'cutting much'; Latin *meme, tete, sese,* etc. Very early the primitive Aryan people began to employ this method of strengthening their verbs. By the side of the simple present arose the reduplicated present, expressing intensive action. This is the origin of those old reduplicated presents in Sanskrit, Greek, and Latin; all were originally intensive verbs. Indeed the Sanskrit in its latest literary period continued to form intensives, iteratives, and frequentatives, after this primitive method, by reduplication, and the Greek has a few examples of a similar kind. This form gradually assumed the signification of completed action, the mere repetition suggesting the idea that the action has been already once performed.

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Thus arose one of the earliest tense-forms, denoting completed action, a perfect. This must have become fully established before the separation, as we find it bearing this signification in old Indian, Bactrian, Greek, Latin, German, Celtic. The Lettosclavic alone has lost all traces of it.

II. Subsequent History. 1. Sanskrit. In the earliest period this form possessed no other meaning than that of completed action, and this was the only form bearing this signification. Very early, however, it began to lose this meaning, and with decay of *form* dwindled down in *meaning* to a mere past tense in narration. New forms arose to supply its place. (*a*) Periphrastic perfects in *âsa, babhûva,* and *cakâra,* which *are* perfects because of the reduplicated auxiliaries. (*b*) The analytic forms made up of the present of *as,* 'to be,' and a perfect passive participle, are perfects by implication. This participle in *tas,* added to the root, expresses the result of the action, and implies that the action is already completed. (*c*) The combination of the present of the auxiliary and a perfect active participle not only expresses the result of the action, but attributes to the subject the possession of the completed action; thus *uktavân asmi* is not unlike the Latin *dictum habeo* and the English 'have said.'

2. Greek. Throughout its literary history it has preserved the form and signification entire, and no new forms have arisen to rob it of its functions.

3. Latin. Very early the form began to decay. Only about twenty-seven reduplicated forms remain, but many others show traces of it. All in *i* originally contained it. Several new forms arose. (*a*) Those in *si,* as *scrip-si,* contain probably a reduplicated *es,* 'to be.' (*b*) Those in *vi* and *ui* contain the perfect *fui.* (*c*) Of the analytic forms, the periphrastic forms in active and passive are combined with a perfect of the auxiliary; those in *tus* in the passive may be explained like those in *tas* in Sanskrit; those with *habeo* as the similar form in Sanskrit. All these forms, besides their proper signification of completed action, have taken on also the function of a simple past tense in narration.

A recess was taken till afternoon.

Afternoon Session.

On re-assembling, it was, on motion,

Resolved, That a Committee of five be appointed by the Chair to recommend a suitable time and place for the next meeting; and that a further Committee of five be appointed by the Chair to nominate officers for the next year.

The President appointed as the Committee on that part of his address which had reference to a reformation of English spelling, Professor Francis A. March, Professor S. S. Haldeman, and Professor Lewis R. Packard.

Mr. C. M. O'Keefe, of Brooklyn, N. Y., read a paper on "The Proper Names in the First Sentence of Cæsar's Commentaries."

He stated that when, in 1807, the foundation of a scientific and genealogical classification of the human languages was laid by Frederick von Schlegel in his

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Sprache und Weisheit der Indier, and the Indo-Germanic family was defined, no conception was formed by the learned German as to the place of the Gaelic in that group. Five years subsequently, however, Pritchard published his "Researches into the Physical History of Mankind," in which the connection of the Celtic with the Indo-European family was adumbrated if not determined. And in 1832 another work—now wholly useless—by the same author, "The Eastern Origin of the Celtic Nations," placed their affinity beyond dispute. In 1837, Pictet's valuable treatise, "*De l'affinité des langues Celtiques avec le Sanskrit*," proved the advantages possessed by Gaelic over the kindred dialects of Wales and Brittany. Pictet was followed by Professor Bopp, who published in 1837 "*Die Celtischen Sprachen*," and he again by J. Kasper Zeuss, whose "*Grammatica Celtica*," on which he spent fourteen years, amazed and delighted the republic of letters. Basing their opinion on the researches of these profound scholars, as well as on Diefenbach and Jacob Grimm, such men as Arnold in England, and Anthon in America, and Thierry in France, considered the word *Gallus* and *Gael* as identical. But this view is not accurate. The word *Gael* signifies an Irishman.* As the word 'Jew' is derived from a Hebrew patriarch named Judah, so the word 'Gael' is supposed to be derived from a primæval progenitor of the Irish race named *Gaedhil*. If they had asked an illiterate peasant who spoke the vernacular what was the meaning of the word *Gael*, he would have told them that it signifies 'a kinsman,' while *Gal* or *Gaul* means a foreigner. Nothing could be more at variance in meaning than these two words. In the Welsh and Breton the word *Gal* signifies 'foreign.' One of the many commentators on "Ossian's Poems" asserts that the ancient Irish were so barbarous as to apply to themselves and to their enemies one and the same name. But on the other hand, it has been reasonably maintained that no people, however rude and ignorant, ever confounded their nationality with that of their foes—that it is not only unexampled, but utterly impossible; and that between himself and the stranger he fights and kills, the warrior of the rudest tribe makes a marked phonetic distinction. This is a very plausible objection which Arnold, Anthon, and Thierry should have considered. On this subject a learned writer says: "Finding thus that the word (*Gal*) means 'foreign' in all the languages where any form of it occurs, the Editor holds until further proof be adduced * * * that the ancient Celtic inhabitants of modern France and northern Italy did never call themselves *Galli* at all; but that, *Gallus* perhaps meaning in old Latin what *Gal* means in Gaelic, the old Itali called their invaders from beyond the Alps *Galli*, because they were strangers; and that the name continued to be applied to the people to whom it had been most particularly given after it had lost its primitive and more extended meaning. So the Anglo-Saxon *Wallisc*—or the English 'Welsh'—has lost its more general signification and it is now forced as a national name upon the Cymri whether they will have it themselves or not."

Now the true explanation lies in the fact that when the Irish were at home in their sea-encircled Erin, they termed themselves *Gaeil*. But when they went abroad, when they invaded what they called *Lochlin*—the continent of Europe—they ceased to be simply *Gaeil;* they became *Gal-Gaeil*—'foreign Irishmen.' The Gaeil inhabiting Alba—the Highlanders of Scotland—may be called *Gal-Gaeil*. This compound epithet occurs in the "Annals of the Four Masters,"

* See "Manuscript Materials of Irish History," by E. O'Curry, volume i., page 3.

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and is explained in a note by Donovan as signifying "piratical Irishmen." It occurs likewise with the same signification in Smerwick's "History of the Clans of Scotland." The Gal-Gaeil were roamers of the deep—knights-errant of the ocean, who sallied forth from their island-citadel in search of adventure, gold, and renown. Under Hugony Mor such adventurers with the name of Celts overran Western Europe. The Roman writers having this compound epithet before them, naturally took the first and as naturally rejected the second member as redundant and superfluous. They pluralized *Gal* and termed them *Galli*, which they certainly were in that place. As to the other member, it is a remarkable fact—which has never previously been noticed—that the name foreigners impose on the Teutonic race, which they themselves recognize with reluctance and pronounce with difficulty—the name of 'German'—is identical in meaning with *Gael*. *Germanus* is a translation of the word *Gael*, or, if you will, *Gael* is a translation of *Germanus*. *Gael* signifies 'near akin, closely allied, come of the same stock,' and I need not tell you that *Germanus* has the same signification. Speaking of the *Germani* the Delphin editors say: "*Sic forte a Romanis dicti, quod mutuis auxiliis se juvarent, et communi quodam fœdere essent conjuncti.*" That is: "They received this name from the Romans because they rendered mutual help to one another and were linked together in the bonds of a common confederacy." Strabo in his fourth book, as translated by Pelloutier ("*Histoire des Celtes*," tome 1, page 34,) says: "The Germans resemble the Gauls; their features and customs are similar, and they feed on the same aliments. I am therefore persuaded that in calling them Germans, the Romans meant to convey that they are kinsmen and relations of the Gauls." The words which Pelloutier quotes (*ibid.*) from Dionysius Halicarnasseus, "*quelques Celtes que l'on appelle Germains*," may be translated, "some Celts who are termed Gaels." I have not time or space to show how well the writers of Classic antiquity understood a language which is utterly unknown to modern scholars (Arnold's "Rome," volume i., page 200); I mean the venerable vernacular of Ireland. But knowing that language they naturally and inevitably termed the Irish *Germani*—that is *Gael*. Anthon says, "the term *Galli* is only 'Gael' Latinized." No; it is not the term *Galli*; it is the term *Germani* which is the equivalent of *Gael*.

From this it seems obvious that when Strabo says the Germans were "true Celts," Strabo was right. Speaking on this subject, Arnold says in his "History of Rome," "Dionysius divided the country of the Celts (Κελτική) into two great divisions, which he calls Gaul and Germany" (XIV. 2. Fragm. Mai). Strabo describes the Germans as the most perfect and genuine specimens of the peculiarities of the Gaulish race, and says that the Romans called them Germani, "true," "genuine," to intimate that they were genuine Celts.

We read in a fragment of the *Ephemerides* that Cæsar, in the confusion and tumult of a hand to hand engagement, and mounted on a "termagant steed," was suddenly captured by a Gaulish warrior, who—likewise a horseman—putting his brawny hand on his shoulder, made him prisoner. At that moment the Gaul heard a fellow soldier—possibly a superior officer—exclaim, "*Is Cæsar e*": "*He is Cæsar.*" But he mistook the words; in the disorder and clamor of the combatants, he fancied the speaker to exclaim, "Cast him free—liberate him." Now what words were those which so closely resembled the name of the illustrious Roman? They were these: *caith saer e*, "Cast him free." *Caith* is the second person, imperative mood of the verb *caithim*, 'to fling, to cast,' and *e* signifies 'him.' It is a personal pronoun equivalent to *eum* in Latin. "Throw him

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loose." "*Hoc autem ipse Cæsar,*" says Servius, "*in Ephemeride sua dicit, ubi propriam commemorat felicitatem.*" According to Servius the words used were: "*Cecos Cæsar.*" This would be written in modern Irish, *Caoc* 'oh! blind man,' *is* 'he is,' *Cæsar* 'Cæsar.'

From this incident, as well as from the geographical nomenclature of the country, and the "Formulas of Marcellus," translated by Jacob Grimm, it appears that the soldiers whom Cæsar encountered were *Gal-Gaeil*—an Irish-speaking people residing in a foreign conntry. What Leopold Contzen ("*Wanderungen der Kelten,*" p. 92) says of the sacerdotal order is equally applicable to the military caste: "*Von hier war es nach Gallien verpflanzet*"; for this reason: "*In Irland hat sich druidische Lehre am langsten gehalten.*"

The letter *t* in the imperative *caith*, though mute at present, was unquestionably sounded at one time. But when was that? Not when Cæsar was captured by an Irish warrior on a field of Gallic battle. Not 1800 years ago. To find the period when the *t* was sounded we must go back 1800 additional years, to a time—very possibly—when the temple of Belus was not yet mirrored in the waters of the Euphrates, when the sandy desert of Karnak was yet unadorned by the form of a Sphinx. It appears to me that if the *t* were sounded Cæsar would have lost his life on this occasion. The javelin of a Celt might have changed the destinies of the world. But if this be so, it seems evident that Irish scribes have preserved this *t* for more than 2,000 years. "It is a proof of the resistance given by Irish Ollaves and bards to the linguistic corruptions of the vulgar."

The next paper was presented by the Rev. Carl W. Ernst, of Providence, R. I., on "The Structure of the German Sentence."

Such knowledge as people have of language may be divided into three classes: empiric or historic knowledge, scientific knowledge, and philosophic knowledge. The first of these, and especially that knowledge which we have of our mother-tongue, we derive from experience, in an historic and evolutionary manner, by listening to words, whatever they are, by the energy of practice, and by cultivating speech as a fine art. Few people rise beyond this experimental knowledge of language. And it is all-sufficient for purposes outside of ourselves. Fine illustrations we find in the courts of law, in the houses of trading and true business, among those who have something to say. We know a language scientifically in so far as we know it consciously; objectively, in so far as we perceive the living laws which pervade it, though not seen by common eyes. Philosophic knowledge of language is empiric, scientific, and more: it is an art-knowledge, and completely satisfying the subjective requirement. Some minds cannot rise to the full dignity of a dialect; other minds, less circumscribed, go beyond it. But every mind must be absolutely satisfied, must cease to doubt or to believe that imperfect knowledge is unavoidable. We know English and German philosophically when we know them completely, organically, when they give full answer to our last questions. And whatever we know philosophically, that we comprehend by one single intuition. This intuition seems divine before we have exercised it; after we have exercised it, it is no more divine, but the pledge of immortality.

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All persons who reason and are uttering articulate sounds speak empirically; scientific knowledge is the result of historical and original investigation (historical investigation is the acquiring of discoveries made before our day; these discoveries form the body of historical philology); philosophic knowledge involves the very largest empirical knowledge, the knowledge of philological science and scientific philology, and that element which constitutes the artist—genius. And by genius I mean an element which we produce by evolution from our own humanity.

Objectively every language is philosophic and perfection. But this perfection is not always beheld by man. Of Chinese, for instance, we have barely empiric knowledge. But portions of Portuguese, Russian, and Arabic are known to us (I mean to European philology) scientifically. Large portions of English are yet waiting for scientific treatment. Many phases and portions of Greek, Latin, English, French, German, may be known adequately, to perfection, philosophically. Every soul that thirsts for philosophic knowledge must go through the same enchanting process which we admire in those who "gehen auf der Menschheit Höhen."

It will be attempted to treat the structure of the German sentence philosophically.

Speech *seems* to be unlimited, for it is an attempt of reasoning man to reproduce physical and metaphysical realities through the means of articulated sounds. Its source is the universe—the world without man and the world within man, the heavenly constellations, so awful and yet so calm and calming, and the moral law within us, the sleeping emotions that rise marvellously without a bidding in our own small self. The end of speech ends only with the never-ending end of human aspiration. It is imperative to limit the subject, since only limitation promises victory. Fasten the discourse of human speech at a mathematical point, and behold!. There are certainly two elements—the physical sound, and the metaphysical thought, or the mental reflex of the object visible or invisible. Certainly, one reflex with its congenial articulation is not human speech; at best it is a word, an interjection it may be, perhaps only an animal exclamation. Speech only begins with the organic and unifying combination, with the living union of thought and thought, articulation and articulation. A may be a word, B likewise; the addition A + B is not speech, but a combination of words; the formula (A + B) is better; the full divinity of speech we have only when we have the truth (A + B) = C. The English expresses this rather felicitously by its use of the words 'infant' and 'person,' 'language' and 'speech.' The unit thus found, logicians call a proposition, grammarians a sentence. *A sentence is the unit of speech;* its smallest appreciable unit and its largest possible effort. The sentence is the circle within which all the possibilities of speech are exhausting themselves.

This understood, we have one element of certainty gained and may prepare for the fruition of all the certainties implied; nay more, for new certainties. The father of modern philosophy, Descartes, compares the conquest of a single certainty to a victorious battle; to have been a victor eight or nine times he considers enough for his entire philosophy. The combining of sentences constitutes the art of rhetoric, poetry, and all literature. The analysis of sentences constitutes the science of etymology and grammar. Nothing great can be done in the study of language unless the field be limited. As soon as we limit ourselves and have discovered certainties, nothing truly great seems to be beyond reach.

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From the nature of the sentence it follows that there can be but *one* sentence, in the same way in which there can be but one square or circle. Every sentence consists of and in a union: the two elements of the union I will call terms. Hence there is but one sentence, a prototype to which all others may be reduced; the sentence consists of terms. In the same manner in which there are imperfect circles, there may be imperfect or unfinished sentences. An unfinished sentence may be made complete by adding to it the one term which it supplements. Terms may consist of one word; but even a whole sentence may be treated as a term.

The two essential parts of a sentence are the subject and the predicate; the subject stands first. The predicate often consists of a verb and its complements; the verb stands first, the complement second. The complement may be a particle, a past participle, or an infinitive; these are arranged in the order indicated. It may be stated incidentally that the particle is always spelled in one word with the past participle or infinitive. Whenever there are any terms besides these, they stand between the verb and its complement, and this constitutes the peculiarity of German sentences. Hence, since the burden of the predicate lies in the complement, the compactness and architectural finish which make German a more excellent instrument for the highest style of art in writing than either French or English.

The terms standing between the verb (and the verb always is in the present or past tense) and its complement are usually objects and adverbs. They are always arranged according to their importance, the most important being the last. When sound and thought go hand in hand, the most important term has also the greatest number of syllables. Often the arrangement is the following: (*a*) a short adverb of time; (*b*) a dative; (*c*) an accusative; (*d*) a prolonged adverbial qualification. As soon as we learn the harmonious coincidences of syllables not heard and syllables heard, we enter the domain either of personal shortcomings or of personal perfection and rhetoric. Any one of these intermediate terms may be made prominent by being placed nearer or entirely at the end of these terms. Another way of making it somewhat emphatic is that of placing it at the beginning of the entire sentence. This is often done to bring variety into the succeeding sentences and to break the monotony of having the subject always first. But always the verb retains its typical place; it is always the second term in the sentence. If the subject cannot be the first term, it is the third. This is also the case in interrogative sentences having an interrogative term. Whenever the interrogative term is wanting, also in conditional sentences that have no conditional term, the verb stands first. The complement stands first only in poetical and highly animated language. The verb stands first also in imperative sentences.

More possibilities of arranging the terms of a sentence there cannot be; and when we know the number of terms and the nature of the sentence we can compute mathematically the number of possible arrangements.

Clauses, or sentences lacking one term, always are linked to this form by a special term, mostly a relative or subordinating conjunction; the verb in all clauses stands last, or after all other terms, including its own complement. It is necessary to indicate with unfailing certainty that a sentence is incomplete, secondary, a mere clause; and this is done by the term that opened the clause and by the placing of the verb at the end of the clause. A clause, just like a complete sentence, may be used as a term.

These laws may be observed to great advantage in the philosophic writers, or rather in the philosophic passages of the great German writers: e. g., Humboldt,

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Lessing, Kant, Fichte, Schelling, Hegel. The difficulty commonly attributed to the letter does not lie in the dimness of their speech but in the weakness of minds that cannot rise to the energy of German philosophy. Such minds are also beneath the philosophic intuition of German sentences. Yet all those being true may rise to its living life, and the truthful shall attain to the rare privilege, that of possessing their own souls.

A recess was then taken until evening.

Evening Session.

On assembling, the President appointed as the committee on the place and time of the next meeting: Professor E. P. Crowell, Professor C. H. Brigham, Mr. C. J. Buckingham, Professor T. D. Seymour, and Professor W. G. Richardson.

Also, he appointed as the committee to nominate officers for next year: Professor W. W. Goodwin, Professor M. L. D'Ooge, Professor F. P. Brewer, Mr. A. Williams, and Mr. C. D. Morris.

Col. T. W. Higginson then read a paper by Mr. Augustus C. Merriam, of Columbia College, New York City, on "Troy and Cyprus."

The purpose of the writer was, by a comparison of the Cesnola collection of Cypriote antiquities with those dicovered by Dr. Schliemann on the hill of Hissarlik, to show to what extent the "Aryan emblems" of the Schliemann objects are to be found upon the Cypriote, and to exhibit the numerous lines in which the art of Cyprus ran parallel with that of Hissarlik, interlaced with it, or stood as its fountain-head and model.

The pottery of the Cesnola collection may be divided into four classes, of which the first, second, and fourth represent different epochs of time, while the third may or may not be separated chronologically from the second. The first class is from tombs at Alambra, and was found associated with the small terra-cotta warriors and bronze weapons which Lenormant has identified with the Pelasgians who took part with the Teucri and Danai in the invasion of Syria during the reign of Rameses III., thus placing them as early as the 14th century B. C. Confirmatory testimony of the Aryan occupation of Cyprus was cited from Genesis, Homer, and the Egyptian and Assyrian records, demonstrating that the Japhetic element was predominant in the earliest days, while, later, the Phœnician became prominent, and in the 8th century the Greeks ruled the chief towns.

The bronze weapons from Alambra are striking counterparts of those from Hissarlik, and in the spearheads the characteristic noticed by Schliemann, that they fit into the shaft, instead of around it like the later Greek and Roman, prevails here as well. The pottery, like the Hissarlik, is not only destitute of painting, but all ornamentation that is not in raised work has been incised while the paste was soft, and the incisions filled with a white clay to develop the pattern more strikingly upon the red or black ground. The surface has been glazed by a stone-polisher, worked by hand. In shape, parallels are found in the vases with the long, upright, beak-shaped mouth, like No. 105 (Schliemann, English

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Ed.), and those with animal or bird-shaped body (Nos. 114, 151, 152); but no "owl-faced" vessels, or *depa amphikupella*, appear. Their ornamentation is much more profuse than that of their parallels, and is lavished upon the vessels without stint from top to bottom. But the figures are of the same general character (No. 62), parallel zones, bands filled with strokes invariably oblique to their bases, and quadrilaterals similarly filled. Of "Aryan emblems," there are "full suns," "rising suns," both round and angular, zigzags, etc., but not a single *suastika*, or "flaming altar." Besides the vessels, there are 80 terra-cotta whorls exactly similar to those which Schliemann finds so numerously. Nine-tenths of these are incised, and with like figures upon the flatter upper surface, such as Nos. 320, 338, 433, 440, 478, of the English Edition, and Nos. 24, 25, 115, 183, 225, of the Photographic Atlas. As with the vases, the ornamentation is more profuse, not being limited to the upper surface. The longer face, also, is invariably blazoned all around, with figures like those of the vases. They are quite destitute of the *suastika*, and there are, perhaps, no evidences of wear, in reference to which point it is to be remembered that, unlike the Hissarlik whorls, they occur in graves. The Schliemann vases are generally so fashioned that an upright position must be obtained by the addition of three or four legs, or, most commonly, by suspension, for which pierced projections are especially provided. So, all the Alambra incised vessels are without a base, and only five are tripods. But there are some fifteen Egyptian cruses belonging to a variety of which only a single specimen is said by Birch to have been found outside of Egypt, and that at Tyre. These have a pedestal, are turned upon the wheel, and are not incised; but a part are ornamented with a flat, raised, ram's horn curve, like No. 183. Other foreign objects are an Egyptian *lagena*, and a Babylonian *aryballos*. The only signs of paint are upon a small flask and vase, and upon the terra-cotta warriors, whose accoutrements are roughly delineated in red and black.

The second and third classes are from the so-named "Phœnician" tombs at Idalium, situated six and a-half feet below the Greek graves (fourth class). With the second class were found some Egyptian *scarabaei* and Assyrian cylinders. The former may possibly take the place of the whorls of class one. The color of the vases is mostly a lightish yellow, but in shape there are many counterparts of those with incised patterns. Especially numerous are the upright beaks, above fifty, all told. Tripods are infrequent, and the pedestal is coming more into use. Paint has completely usurped the place of incision, retaining, however, many of the same patterns, particularly on the beaked vessels. Beyond these, the stroke is freer, and the lines begin to cross each other, forming small squares and diamonds. None have the *suastika*, except two of a unique variety, and of these a third specimen shows a character which greatly resembles that on the stamp of the Schliemann seal No. 4; also, a Cypriote *pi*, and arrow-head figures like those on the side of the same seal. When compared with others on the same class of objects, they appear to be decorations simply.

The third class differs altogether from the preceding; color of a brilliant or deep red, clay fine, shapes most elegant and perfect in contour, decorations sparing and consisting almost exclusively of concentric circles, the pedestal used in all varieties but one, the upright beak and Aryan emblems wholly wanting. In fact, they appear to be thoroughly Phœnician, as the guide book declares. Hitherto, the devices resorted to for obtaining a clean discharge with a narrow stream from the vessel have been either the upright beak, some modification of that, or the spout projecting from the body. Such is the case likewise with all the Hissarlik

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vases up to the fourth stratum, where the expedient of simply pinching the edge of the *oinochoe* into a convenient mouth, first appears. This is brought systematically into use in Cyprus among these Phœnician objects first. In general, throughout the collection, upon each of the indentations formed by this process of pinching, a round eye is painted.

The fourth class falls precisely under the definition given for the very earliest ceramic ware from Greek sites, such as Mycenae, Athens, etc., and may represent the revival of Hellenic influence after Phœnician domination. However, with a change of ground-color to light drab, many of the types of class three are exactly reproduced both in shape and ornamentation, though their elegance of contour has degenerated. Other varieties differ materially. In a jug with pinched mouth, short neck, and plump body, with a round eye painted on each side of the lip behind the sharp beak, the handle decorated with braids that end in a flourish on the vase like the loose end of a lock of hair, and a throat-band round the neck, from which depends an apron, or breast ornament, little imagination is needed to see as much of a combination of bird and human being as Dr. Schliemann finds and names "Thea Glaukopis Athene." Add to this that upon these jugs the true *suastika* now appears in numbers varying from two to six, and in conjunction with these the simple cross, with the " nail-marks." The collection shows elsewhere three small vases representing owls clearly developed, while on the neck of a large *oinochoe* a real female face is cleverly moulded. The natural tendency of the potter's art to extend the province of its productions beyond the original aim of mere utility, even to the fashioning of the vase into some resemblance to the human form, or animal, or bird, may be seen not only in the vessels from the Mediterranean, but in those from Peru and from the Indian mounds of Missouri, where these forms are frequent. One represents a female figure in a kneeling posture, with hands upon the knees, almost an exact counterpart of which is found in a Mexican idol of stone in the Peabody Museum.

The *suastika* occurs upon nearly a hundred objects of class four, chiefly in the form with bent ends, with which the "nail-marks" are not found, while they regularly accompany the simple cross. None of these objects belong to the type of class three. Other emblems are the "sacred tree," the antlered animals (one being outlined in nearly the same stage as No. 75), birds, and the zigzag of four sections (Atlas, No. 3,001), sometimes enclosed in a rectangle of red. The Maltese cross, which is an Assyrian emblem of the sun-god Shamas, and occurs on numerous *paterae*, is never found but once on the same vessel with the *suastika*. A bronze shield differs from the one discovered by Schliemann, in its circular shape, in the absence of any furrow, and in the flatness of its rim. Its size, too, is less, being about thirteen inches in diameter. Of the circular, tube-like vases (Nos. 130, 287), there are several specimens, one of which has the *suastika*.

The question whether the figures occurring are to be considered "Aryan emblems" with Schliemann and Bournourf, or, with Von Sybel, the A B C of that elementary school of design through which man struggled from the simplest straight, crossed, and crooked lines, to the fuller achievement of completed figures and life-like representations, is foreign to the present purpose. But the facts of this investigation appear to favor the former.

Professor F. A. March, of Lafayette College, Easton, Pa., presented a paper on "Dissimilated Gemination."

It is a general rule that every letter in a word has meaning. The exceptions

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are for the most part due to changes produced by conformation with similar words in which the letter has meaning, or they are connected with the lengthening of letters. Sound gravitates to accented syllables. A long vowel is well represented by writing it twice. When a consonant is prolonged, or held, we hear the closing of the organs on the preceding vowel, and the opening of them on the following vowel, as separate sounds; and represent them by writing the consonant twice: the first *p* in *happily* represents the closing of the lips in *hap-*, the second *p* represents the opening of the lips in *-pily*. The second letter is said to be caused by gemination—a sort of fissiparous generation.

But it often occurs that the following letter, or some other cause, modifies the sound produced by the parting of the organs, so as to render it unlike that produced by their closing, and a strange letter then appears in place of a simple doubling. This may be called dissimilated gemination.

If the term is applied with a certain freedom to all cases where an emerging letter is made by a slight modification of the final movement of the old preceding letter, it affords a convenient classification for a considerable part of the examples of epithesis and epenthesis heretofore unexplained.

The continuous consonants give the most striking examples, and among these the nasals.

The labial nasal *m* is frequently doubled; but the same movement of the organs which makes *m* with the nose open, will make *b* if it be closed; hence we find *b* appearing in place of a second *m*: Anglo-Saxon *slumerian* (Icelandic *slyma*) changes to German *schlummern*, but English *slumber*; so Gothic *timrjan* to German *zimmern*, English *timber*; Latin *numerus*, English *number*. In English the anticipation of the coming *r* closes the nasal veil as the lips are parting, and what would have been the latter *m* turns out a *b*. A similar effect is produced by *l*, as in *fumble* (L. Ger. *fummeln*), *mumble*, *crumble*. It also occurs at the end of words, as *limb*, *numb*, where the *b* used to be sounded. When a surd, as *t* or *s*, follows this dissimilation, it assimilates the sonant *b*, and in place of *m* we have *p*; *empty* (Anglo-Saxon *emtig*), *tempt*, and *glimpse*, *sempster*, *Thompson*.

Quite similar are the changes of the lingual nasal *n*: *nnr* to *ndr*, as in *thunder*, Anglo-Saxon *punor*; *nnl* to *ndl*, as in *spindle*; *nn* to *nd* final, as in *sound*, *round*, and sometimes by a surd dissimilation *nn* to *nt*, as in *ancient*, *parchment*, etc.

With these are classified the emergence of *t* after *s*, *ss* being dissimilated to *st*, as in *glisten*, from *glisnian*; and final *st* in *midst*, *against*, the second person singular of verbs (*lovest*), and the like.

So also *rr* to *rd*, if found; *ll* to *ld*, as in *alder*; *tt* to *tr*, as in *partridge*, *cartridge*; *dd* to *dr*, if found: and by a further extension of the thought, *uu* to *uw*, *ii* to *ij*, *ig*, as in the Anglo-Saxon and other old inflections.

So also, by dissimilation of the first or closing movement of the doubled consonant, the emergence of *n* before *d* or *s*, as in *messenger* from old *messager* (*g* = *dzh*), *porringer* from *porridge*, *ensample* from old French *essample*; and *r* before *s* or *th*, as in *hoarse* from Anglo-Saxon *hâs*, *swarth* from *swath*.

Lists of words were given exemplifying these changes.

On motion, it was

Resolved, That, in order to attend the excursion for which arrangements have been made by the Local Committee, the Association will hold no session to-morrow afternoon.

Adjourned till to-morrow morning.

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THIRD DAY—THURSDAY, JULY 15.

The Association met at 9 o'clock.

The Secretary reported the election of new members:

Dr. J. B. Bittinger, Sewickly, Penn.; Mr. William A. Goodwin, Portland, Me.; Mr. J. A. Shores, Connecticut Literary Institute, Suffield, Conn.; Rev. J. Colver Wightman, Taunton, Mass.

The Committee on that part of the President's Address which referred to a reform of English Spelling, presented a report.

It does not seem desirable to attempt such sweeping changes as to leave the general speech without a standard, or to render it unintelligible to common readers; but the changes adopted in our standards of the written speech have lagged far behind those made in the spoken language, and the present seems to be a favorable time for a rapid reform of many of the worst discrepancies. The Committee think that a considerable list of words may be made, in which the spelling may be changed, by dropping silent letters and otherwise, so as to make them better conform to the analogies of the language and draw them nearer to our sister languages and to a general alphabet, and yet leave them recognizable by common readers; and that the publication of such a list under the authority of this Association would do much to accelerate the progress of our standards and the general reform of our spelling.

They recommend that a committee be raised, to consist of the first president of the Association (Professor W. D. Whitney) and other recognized representatives of our great universities and of linguistic science, to whom the whole subject be referred, and who may prepare and print such a list of words if they think best, and who be requested to report at the next meeting of the Association.

On motion, it was

Resolved, That a committee be appointed to take the whole matter into consideration, with power to sit in the recess, and to report at the next meeting of the Association; and that the committee consist of Professor W. D. Whitney, Dr. J. Hammond Trumbull, Professor F. J. Child, Professor F. A. March, and Professor S. S. Haldeman.

Professor Franklin Carter, of Yale College, New Haven, Conn., read a paper on "Begemann's Views on the Weak Preterit of Germanic Verbs."

The question underlying this paper was, whether the *d* in 'loved' is itself a preterit and stands for an original 'did.' The question is to be answered by an examination of the earliest forms in the Germanic verbs. Begemann, instructor in the New Academy for Modern Languages at Berlin, has denied the generally-accepted theory of composition (which makes the *d* in English stand as the representative of an old 'did'), and adopted the early supposition of Bopp, that in Gothic and old German, and therefore in the other Germanic languages, this

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preterit was derived from the past participle. Grimm noted a resemblance between these preterits and another form so striking as to overbalance in his judgment this agreement in form between the weak preterit and the participle, namely, the agreement between the inflectional endings of the dual and plural in both weak and strong verbs. Under his influence, Bopp abandoned his idea of the derivation of the weak preterit from an ancient participle, and held that the weak preterit was compounded of the original stem of the infinitive and a preterit, meaning 'I did,' so that Gothic *nasida* would mean 'I safe did,' or 'I safe made.'

The resemblance between the weak and the strong preterit is striking when as in the preterit of *bidjan* we have a stem ending in *d*.

Weak Preterit of Nasjan.	Strong Preterit from Bidjan.
Nasida,	Baþ,
Nasidês,	Bast,
Nasida,	Baþ,
Nasidêdu,	Bêdu,
Nasidêduts,	Bêduts,
Nasidêdum,	Bêdum,
Nasidêduþ,	Bêduþ,
Nasidêdun.	Bêdun.

A resemblance so complete in dual and plural asks to be applied to the singular, and for fifty years the termination of the weak perfect has been identified with the preterit of a strong verb, *dad* or *daþ*, *dast*, *daþ*, *dêdu*, *dêduts*, *dêdum*, *dêduþ*, *dêdun*. This preterit has been referred to the stem Sanskrit *dha*, Greek θε in τίθημι, Latin *da* in *condĕre*.

In regard to the details of the development of this compound, scholars have not agreed, and Begemann makes much of this disagreement.

Begemann himself helps to establish by forms from Old High German and Old Saxon, that there was once such a strong preterit as would correspond to *daþ* in Gothic, though the verb-root does not exist independently in Gothic or Old Norse, except in a substantive form.

There was, then, earlier than *tëta* in Old High German, a form *tat;* earlier than *dëda* in Old Saxon, a form *dad*. This may indeed prove that *nerita* is not contracted from *neri-tëta*, or even that *nerita* and *tëta* are precisely similar formations, but it does not prove that *nasi-da* is not compounded, or that the last syllable may not be this very strong preterit in Gothic, whose existence in Old High German and Old Saxon is demonstrated. The only possible difficulty about this supposition is, that we do not know any Gothic laws by which the final þ could be dropped and the form *nasi-daþ* become *nasi-da*. But it may be wise for all that to believe that the change *did* take place. More than one of Begemann's arguments reduces itself to the "incomprehensible" of this change.

The agreement in form between the preterit and the participle is the strong reason with Begemann for deriving the preterit from the participle. This agreement may be either incidental, accidental, or organic. The agreement is too uniform to be accidental in all cases. If organic, the participle must be derived from the preterit or the preterit from the participle. The participle is the representative of the Sanskrit participle *ta*, *tas*, Greek το, τος, Latin *tu*, *tus*, and cannot be derived from the preterit. Is the preterit derived from the participle? Begemann says "yes," and that on this explanation all difficulties vanish. He admits that the *ed* of the dual and plural are inexplicable on his theory, but calls this difficulty "an innocent orphan boy" in comparison with the objections to the

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composition theory. The defective preteritive *iddja* is also made to support this theory, apparently because it does not end in *da*. But Grein's explanation of this preterit as for *idida*, he mentions in a note, but does not seriously consider. Apropos of *iddja*, Begemann says: "Linguistic facts do not allow themselves to be adapted to measuring rules." But an anomalous *iddja* without any generating participle is here assumed as the "most brilliant confirmation" of the theory that the weak preterit is the offspring of the participle. Furthermore, in support of this theory an anomalous second person singular *saisost* dictates a second personal singular ending *st* to the preterit of all strong verbs, and becomes in Gothic "eine durchgreifende Regel." But to crown all, the *ddj* in *iddja* suggests and imposes a new form of comparison (*dj*) on all Indo-Germanic adjectives!

Begemann's second treatise deals with the difficulty presented by many that a transitive tense is not to be derived from a passive participle. Building on Von der Gabelentz's treatise in the reports of the Royal Saxon Society, he endeavors to prove these propositions: (*a*) passivity developes itself from activity through the medium of reflexiveness; (*b*) reflexiveness is expressed formally, or results from the conception and remains unmarked; (*c*) in the verb the usage is various, while in the noun reflexiveness lies only in the conception. The different Indo-European languages are examined and found to contain many participles, passive in form with active significations. The Gothic presents fewer than the Middle German. Begemann claims that it is because of the scantiness of the records. But it seems most improbable that enough past participles retained an active meaning in the primeval Germanic period to give an active meaning to all words or verbal forms derived from them.

The analogy between the participial perfect in the Iranian languages and this preterit is exhibited. But the analogy is *first* assumed, and the Lithuanian, which, according to its investigators, is the connecting link, both in grammar and word-fund, between the Germanic and the Aryan, presents us a compound past tense, possibly a compound of the very stem which has been found in the final syllable of *nasida*. An analogy from the Hungarian, belonging to the Finnish class of languages, is worth little here.

The organic development of the weak preterit from the ancient participle is then not proven. But is it incidental, that is in many cases the result of assimilation? Such is the meaning of Bopp's "Schutzbündniss," and such must be the truth, as for instance, in English the *l* of *would* has forced its way into the preterit of *can*, and the *o* of the preterit of *will* is found in *won't*. This incidental agreement cannot exclude the accidental in some cases, as in *nasi-da*, *nasips*.

Dropping derivation of the preterit from the participle, "the incomprehensible" of the loss of the final *d* in *nasi-dad* (the first form according to the composition theory) and the contraction of the appended verb in the Old High German plural is rendered somewhat natural by the loss of the dual in the other old Germanic tongues. This loss shows a tendency to disregard the fulness of the old inflectional forms. Moreover, the persistence of the vowel personal-endings in Old High German and Old Norse involves fuller vowels and stronger elements than those of the personal-endings of the presents or participial stem-endings in *a* will account for.

The old theory must be regarded in view of these facts and considerations as not overthrown by Begemann, though great credit is due him for the establishment of certain points bearing on the question.

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Professor J. B. Sewall read a paper by Mr. William A. Goodwin, of Portland, Me., on "The Word 'Juise'— Its Pronunciation in Worcester's and Webster's Dictionaries."

Both Worcester and Webster give the word 'juise,' pronounced *jus* with a long *u*, and defined 'justice,' 'judgment,' referring to Gower and noting the word as obsolete. In Pauli's edition of Gower's "Confessio Amantis," at least two instances of the use of *juise* are found. The first is as follows:

All sodeinly the stone shall fall
As Daniel it hath beknowe,
Which all this world shal overthrowe;
And every man shal then arise
To joie or elles to *juise*. (Vol. i., page 38.)

This must be scanned so as to make *juise* a dissyllable, rhyming with *arise* and pronounced *jew-ize*.

Again:

And saide unto her in this wise:
O beste of helle, in what *juise*
Hast thou deserved for to deie (Ib., page 202.)

This is clearly a dissyllable, the accent falling on *ise*. Chaucer spells the same word 'jewise,' and Halliwell's Archaic Dictionary has it defined 'punishment':

I am thy mortal fo, and it am I
That loveth so hot, Emelie the bright,
That I wold dien present in hire sight.
Therefore I axe deth and my *jewise*,
But sle my felaw in the same wise. (Cant. Tales, 1741.)

The word is still a dissyllable, rhyming with 'wise.'

Another instance from Chaucer:

The king commanded his constable anon,
Up peine of hanging and of high *jewise*,
That he ne shulde soffren, in no wise,
Custance within his regne for to abide. (Ib., 5215.)

Another form of the word appears in Wright's edition of the "Deposition of Richard II." (page 26), as follows:

Ther nas rial of the rewme that hem durste rebuke,
Ne juge ne justice that *jewise* durste hem deme.

This has no strictly limited measure, being simply alliterative verse; but making the cesural pause after 'rewme' in the first line, and 'justice' in the second, 'jewise' steps off promptly on its two feet where 'juice' might limp on one.

Still another form occurs in Wright's edition of Piers Ploughman (page 392):

And if the kyng of that kyngdom
Come in that tyme
There feloun thole sholde
Deeth or oother *juwise*,
Lawe, wolde he yere hym lyf
If he lokyd on hym?

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This is also alliterative verse, with scarcely as much of metre as can be found running throughout "The Deposition"; and, contrary to the before named examples, the accent naturally falls on the first syllable of the word; but it will still not be 'juice' but 'jewise,' following the trochees 'kyngdom' 'tyme,' 'feloun,' 'sholde,' and many others in the immediate context. From these instances, which are all I can now adduce, I do not think there can be any *juice* in the word, and I fear that the discussion of the question will prove to be dry reading; howbeit, "fair play is a jewel." Would it not be a luxury to roam about among our letters and combine them at will, as the above-quoted eminent spellers did, without fear of being snapped up by any school-boy fresh from a spelling-match?

Mr. Charles D. Morris, of Lake Mohegan, Peekskill, N. Y., read the next paper, on "Some Forms of Greek Conditional Sentences."

This paper was designed to criticize certain statements of Professor Goodwin as to the import of some forms of the Greek conditional sentence, as laid down in his books and enforced in a paper read before the Association at its Easton meeting. The point specially controverted was, that between conditions expressed by ἐάν with the subjunctive and εἰ with the optative there is no distinction except that the former is a "more vivid" mode of statement than the latter. It was maintained on the contrary that, if sentences truly typical be selected, it can be seen that one of these forms cannot be substituted for the other without introducing a change so great that, while the one is felt to be perfectly appropriate to the circumstances, the other could not have been used by the speaker without his being conscious that he was talking nonsense. The passages quoted to establish this position were Aesch. Agam. 36:

οἶκος δ' αὐτός, εἰ φθογγὴν λάβοι,
σαφέστατ' ἂν λέξειεν,

and Arist. Nub. 754:

εἰ μηκέτ' ἀνατέλλοι σελήνη μηδαμοῦ,
οὐκ ἂν ἀποδοίην τοὺς τόκους.

These were written on the blackboard, and parallel to each the following suggested modifications:

οἶκος δ' αὐτός, ἢν φθογγὴν λάβῃ,
λέξει σαφέστατ',

and

ἢν μηκέτ' ἀνατέλλῃ σελήνη μηδαμοῦ,
οὔπως ἀποδώσω τοὺς τόκους:

and the question was submitted to the judgment of the Association, whether the watchman or Strepsiades could possibly have expressed himself in the latter way; and the opinion was strongly maintained that no instance can be found in which a future supposition as to a thing *known to be impossible*, such as a *change in the order of nature*, is expressed otherwise than by εἰ with the optative, unless indeed it is expressed otherwise for rhetorical purposes, or in the manner of a prophet.

The speaker controverted also the statement of Professor Goodwin, that the proverbial expression, "if the sky falls we shall catch larks," must be translated by ἢν with the subjunctive; as

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ἢν γὰρ πέσωσιν οὐρανοί, μάλ' εὐχερῶς
τὼρνίθια ληψόμεσθα :

and it was maintained that, unless expressed rhetorically or prophetically, it must be rendered :

εἰ γὰρ πέσοιεν οὐρανοί, μάλ' εὐχερῶς
τὼρνίθι' ἂν λάβοιμεν

The conclusion was, therefore, that *εἰ* with the optative expresses a supposition lying consciously within the range of the ideal, while *ἢν* with the subjunctive expresses one to which attaches a greater or less expectation that it will or may conceivably come within the range of the actual; and that, while in a large number of instances the thought may be expressed in either one way or the other according as the mind of the speaker happens to regard the matter, still, if the character of the supposition be such as to necessitate a consciousness of the nature of the case, one form will be necessary to the exclusion of the other.

Professor Fisk P. Brewer, of the University of South Carolina, Columbia, S. C., next read a paper on "The English Suffix *ist*."

It is a common observation that many nouns have been formed lately with the ending *ist*. This suffix in such words as 'artist,' 'jurist,' and 'evangelist,' has been introduced into English from the Greek, where it is a compound. It differs from the old agent-suffix *er* in being more limited. It denotes only the personal agent, while a noun in *er*, as 'baker,' may denote either a person or a thing. Where there is a cognate verb in *ize*, as 'eulogize' or 'plagiarize,' the noun in *ist* may signify the person who does an individual act; but all other derivatives in *ist* are formed from nouns, substantive or adjective, and they denote only the habitual agent. Thus, a 'copyist' is one who makes a business of copying; but one who copies only as occasion requires, is a 'copier,' not a 'copyist.' Among habitual agents are included those whose business concerns itself with some particular article, as 'tobacconists,' or department of knowledge, as 'philologists,' and those who advocate some theory, as 'Darwinists,' or some policy, as 'inflationists.'

With the progress of civilization there is going on a great subdivision of employments and of departments of learning, and it is fortunate that a suffix has been found in English which can be used almost exclusively for forming names of men with reference to their business and pursuits, their theories and principles. Its increasing use is justified by its utility.

Professor F. A. March, of Lafayette College, Easton, Penn., read the last paper of the morning, on "The Immaturity of Shakespeare as shown in Hamlet."

An examination of the works of Shakespeare in the order of their composition shows that he rose very slowly to the hights of his power. He worked for years dramatizing popular tales with a comic vein, and then years more on patriotic parts of English history, before he tried the grand tragic style. After the love story of Romeo and Juliet, Hamlet was his first tragedy, and it has some of the defects as well as the merits of such a work. It was probably long in hand. The following topics were discussed to exhibit traits of age or immaturity :

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1. The meter. The formal metrical peculiarities of the early plays were pointed out and the later changes. In Hamlet, it was said, the early rhymes and formal restraints have gone, but there is still care and finish, perfect art without the negligences of the latest period.

2. There are many things which are not natural utterances of the characters to carry out the thought of the play; but good things brought in to make hits:

Allusions to matters of the day, such as the talk about the children players; Act ii. 2, the actor who played Hamlet, "fat and scant of breath"; and perhaps allusions to Mary Queen of Scots.

Taking off the fashionable style of speech, as in Polonius's imitation of Euphues, and the ranting passage of the player in the style of Marlowe.

Good things from his own common-place book, such as the advice to players, and large parts of the soliloquies, on the badness of the world in general, the effect of prayer, and the like.

3. The want of lively characterization of the subordinate characters. Many of them talk a good deal, but they leave no impression.

4. The youthful point of view from which the characters are seen. Ophelia is ripe in age; her sagacious father is a superannuated bore. Doubt is depth. Made up minds seem superficial. Not so with Miranda and Prospero, or Perdita and Polyxenes.

5. Immature view of the problems of life and death. The writer is wrestling with them. By and by Shakespeare quietly gave them up, and was a cheerful believer that "we are such stuff as dreams are made of, and our little life is rounded with a sleep."

6. Immature treatment of the ghost. In the later plays the ghosts are apparitions of unhinged minds; the Hamlet ghost is the simple ghost of the story-books, visible to vulgar eyes, and what with his poses and long-winded declamation on the stage, and his moveable subterranean noises, is a common-place creation, a "poor ghost." Hamlet does not quite believe in him.

7. Immature treatment of insanity. Shakespeare had not so fully mastered this subject as to give the reins to his imagination, but made Hamlet and Ophelia speak by a theory, according to which the intolerable grossness of Hamlet was the necessary utterance of madness in his circumstances. The writer of Lear would have felt that such grossness was no subject for art.

8. The general atmosphere of lechery.

9. The character of Hamlet is not brought to unity. Some passages seem to have been taken up from the old play, in which Hamlet has a different character from Shakespeare's prevailing thought of him. This, combined with the defective handling of his insanity, is the solution of the enigma of his character.

A recess was then taken until evening.

Evening Session.

The Secretary reported the election of new members:

Professor W. H. Whitsitt, Southern Baptist Theological Seminary, Greenville, S. C.; Professor W. B. Owen, Lafayette College, Easton, Penn.

On recommendation of the Executive Committee, it was adopted

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as a standing rule, that no paper read before the Association shall exceed forty-five minutes in length, except by special vote of the Association.

On motion, it was

Resolved, That the Executive Committee be instructed to forward to the members of the Association, with the notice of the annual meeting, such information as may have previously reached them as to the subject matter of papers intended to be presented to the Association; and that to this end each member of the Association intending to present any paper be requested to inform the Executive Committee of its title at least two months before the meeting.

The committee on the place and the time of the next meeting recommended that the next meeting be held in New York City, on Tuesday, July 18th, 1876.

On motion, the report of the committee was accepted, and the recommendation therein contained was adopted.

Dr. L. A. Sherman, of New Haven, Conn., read a paper on "Some Facts from a Grammatical Analysis of 'The Owl and the Nightingale.'"

Attention was called to the small research which has as yet been made into the grammatical forms and usages of the English language, in the middle period between Anglo-Saxon and Chaucer. Manifestly nothing can be affirmed with exactness concerning English at this stage, until order has been brought out of the chaos of individualities, and all differences of vocabulary and inflection have been brought to light and classified by careful analysis. From such an examination into the grammatical character of the Southern English poem of "The Owl and the Nightingale," a few facts were quoted. The poem is in many respects remarkable. It appears to have been written by a priest, and not earlier than 1250; but there is no certainty as to its author or its date. In spite of the comparatively late date of its composition, it shows, first, a singularly close adherence in inflections to the Anglo-Saxon norm; secondly, a like careful adherence, in the main, in the gender of its nouns to their Anglo-Saxon primitives; thirdly, an unusual paucity of French words.

On the preservation of inflections the first feature noticed is the continued presence of the strong and weak declension in the noun and adjective. The strong has nearly unified the dative and accusative cases in both numbers, and has begun to employ *-s* as a plural ending to feminine and neuter nouns. The weak nouns have changed *-an* to *-e*. The adjective employs strong and weak forms in the same way as Anglo-Saxon with but very few exceptions, and has shortened *-an* to *-e*. The pronoun has begun to lose the distinction between the dative and accusative relation. The pronoun *hwo* is only interrogative, *þe* and *þah* being employed as relatives.

The verb is almost entirely unaltered. The plural of *am*, *art*, *is*, is always *beoþ*, which form occurs five times also for *is*.

In negative sentences as many as three negatives are frequently met with, but two must be *compound*.

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In gender, the masculine is still found in such words as *drem, song, red, wrenche, dep, wei, lust, dom, cwed;* the feminine in *stefne, murþe, heorte, luve, speche.* Not infrequently the nominative singular of nouns shows an inorganic *-e.*

A paper by Professor W. W. Goodwin, of Harvard College, Cambridge,, Mass., entitled "Remarks on Some Points of the Solonic Legislation," was read by title in the absence of the author.

The committee to nominate officers for the next year, presented nominations as follows:

For *President*—Professor Albert Harkness, Brown University, Providence, R. I.

For *Vice-Presidents*—Professor S. S. Haldeman (of the University of Pennsylvania), Chickies, Penn., and Professor Frederick D. Allen, Cincinnati, O.

For *Secretary and Curator*—Professor Samuel Hart, Trinity College, Hartford, Conn.

For *Treasurer*—Mr. Charles J. Buckingham, Poughkeepsie, N. Y.

For additional members of the *Executive Committee*—

Chancellor Howard Crosby, University of New York, New York City.

Professor James P. Boyce, Southern Baptist Theological Seminary, Greenville, S. C.

Professor W. G. Richardson, Central University, Richmond, Ky.

Dr. J. Hammond Trumbull, Hartford, Conn.

Professor Wm. D. Whitney, Yale College, New Haven, Conn.

The report was accepted, and the persons therein named were declared elected to the offices to which they were respectively nominated.

On motion, it was

Resolved, That the thanks of this Association are due to the citizens of Newport, who have so cordially tendered their hospitalities and so generously provided for the comfort of the members present at this meeting, and particularly for the very pleasant excursion to Rocky Point; to the gentlemen of the Local Committee, for their kind attentions; to the Newport School Committee and the authorities of the Unitarian Society, for the use of the Rogers High School building and of the church edifice; to the officers of the People's and of the Redwood Libraries, for the kind invitations received from them; and to Mr. A. J. Ward for the copies of *The Daily News* furnished to the members.

The minutes of the meeting having been read and approved,

On motion, the Association adjourned.

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1875–6.

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Mrs. A. E. Weston, Antioch College, Yellow Springs, Ohio.
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George H. White, Amherst College, Amherst, Mass.
John Williams White, Harvard College, Cambridge, Mass.
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J. Colver Wightman, Taunton, Mass.
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OF THE

AMERICAN

PHILOLOGICAL ASSOCIATION.

1875.

PUBLISHED BY THE ASSOCIATION.
PRINTED BY THE CASE, LOCKWOOD & BRAINARD CO.,
HARTFORD.
1876.

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